Registered at the G.P.O., Sydney, for Transmission by Post as a Newspaper. Published Weekly.

THE

MEDICAL JOURNAL OF AUSTRALIA

(With which "The Australasian Medical Gazette," and "The Australian Medical Journal" are incorporated.)

The Journal of the Australian Branches of the British Medical Association.

VOL. I.—4TH YEAR—NO. 6. SYDNEY: SATURDAY, FEBRUARY 10, 1917. PRICE 6D.

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MENINGITIS ASSOCIATED WITH GRAM-POSITIVE BACILLI OF DIPHTHEROID TYPE.

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Between July 29, 1915, and August 11, 1915, there were admitted to the Children's Hospital, Perth, five patients, in all of whom the diagnosis of meningitis had been made. These cases appear to me, who examined the cerebro-spinal fluid, to present characters of unusual interest. The bacteriological aspects of the cases are essentially the subject of the paper, but the histories, which are unfortunately somewhat meagre in detail, were as follows:—

Case I.—Male, aged 2 years. This patient was admitted to Hospital on July 29, 1915, in a state of convulsions. There was a history of constipation for some weeks previously, with occasional vomiting. The child, however, was not noticeably unwell during that period.

On the night previous to admission the child suddenly developed convulsions, and on admission to the hospital was quite unconscious, and the whole body was rigid. The temperature was 102° F., the pulse-rate 136, and the respirations 52 per minute. There were occasional spasms of the hands and legs. Chloroform, chloral hydrate and bromides failed to control the convulsions.

On the following day lumbar-puncture was performed, and a quantity of clear fluid under increased pressure was drawn off. The child remained unconscious, with flushed face, marked head-retraction and opisthotonos, and there was a profuse perspiration of the whole surface of the body. A second lumbar-puncture was performed with similar findings. The temperature rose to 107° F., when the child died, 36 hours after admission.

Examination of the cerebro-spinal fluid showed many lymphocytes, together with degenerated polymorpho-nuclear leucocytes. No organisms were seen in films of the centrifuged deposit, but on culture media as described below many colonies of a Gram-positive bacillus, indistinguishable morphologically from the Klebs-Löffler bacillus, appeared after several days' incubation. No post-mortem examination was made in this case.

Case II.—Male, aged 4 years, was admitted on July 29, 1915. In this case there was a history of attacks of pyrexia on and off for a week or two prior to admission. On admission, the child complained of severe headache and was very drowsy.

A few crepitations were made out at the base of each lung. There was a sub-acute enteritis, with blood-stained motions, which cleared up in a few days. There was anorexia and photophobia. The child was very irritable, and the drowsiness increased. Lumbar-puncture was performed, and a clear fluid under pressure was obtained. The headache was thereupon very much relieved, and food was taken readily. The child afterwards became drowsy. A second puncture was done again, and fluid under increased pressure was withdrawn.

Six days after admission there was some rigidity of the right side of the body, and the patient was almost unconscious, but could be roused. Two days afterwards there was some rigidity also of the left side. The pulse was slow and irregular. The following morning the rigidity became more marked, the face was flushed and a profuse perspiration bathed the whole body. The breathing finally became laboured, and the child died after having been comatose for some hours.

The cerebro-spinal fluid showed numerous lymphocytes and polymorpho-nuclear leucocytes, the former being most abundant.

In films of the deposit a few Gram-positive bacilli were seen. On cultivation a growth of Hoffmann-like organisms was obtained after several days

Case III.—Female, aged $3^{9}/_{12}$ years. The child had been ailing, and had appeared listless and drowsy for a fortnight before admission. It had vomited off and on during that period. On admission, the temperature was 100.6° F., the pulse-rate 124 and the respirations 26 per minute. After admission, for three days the temperature was sub normal, and then gradually rose to 102° F. It fell again to sub-normal for three days, then rose to 103° F., and again there was a fall to normal for three days. Finally, on August 17, 1915, it rose to 105° F., and the child died on the following day.

During the greater part of the time the patient was unconscious. Kernig's sign was present, and there was head-retraction. The pupils were unequal, and there was muttering delirium. The pulse-rate reached 184 per minute the day before death, and the respirations were 52.

Lumbar-puncture gave slightly turbid fluid, showing lymphocytes and polymorpho-nuclear leucocytes in about equal number. No organism was detected in films made from the deposit, but on cultivation a Gram-positive bacillus of the Hoffmann type was found.

Post-mortem a purulent meningitis was found at the base of the brain.

Case IV.—Male, aged 2 years. This child, convalescent from measles, suddenly became ill with heavy cough, diarrhœa and vomiting. When admitted on August 6, 1915, it was moaning and in a semi-conscious condition. There was head-retraction, and the temperature rapidly rose to 107° F. At this stage the pulse-rate was recorded as 200 and the respirations 68 per minute.

Lumbar-puncture was performed, and a large quantity of turbid fluid under increased pressure was drawn off. The temperature immediately fell to 102° F., but rose again to 103° F., and then fell to normal, and later to sub-normal for several days.

The child rapidly recovered, and was discharged 14 days after admission.

In this case the cerebro-spinal fluid, on centrifugalization, showed mainly lymphocytes and a few Gram-positive bacilli, indistinguishable morphologically from the Klebs-Löffler bacillus. On cultivation, numerous colonies of this type developed. No other organism was found.

Case V.—Female, 9 years, was admitted on August 11, 1915. This child had measles a month previously. She became quite well after the attack, and had no cough. For five days prior to admission she had been drowsy, and had vomited several times. She complained of severe headache throughout.

On admission, she showed a vacant facies and unequal pupils, a double Kernig's sign and *tâche céré brale*. The pulse was slow and irregular. She became comatose early, and died six days after admission, with a temperature of 100.6° F., a pulse-rate of 128, and respirations 28 per minute.

Lumbar-puncture on each of two occasions gave a clear fluid under increased pressure, in which lymphocytes predominated. On cultivation Gram-positive bacilli of the Hoffmann type appeared after three days' incubation at 37° C. No other organisms were found.

I have considered these cases worthy of record for the following reasons:—

(1) Only rarely has the presence of diphtheroid organisms been described in the cerebro-spinal fluid in meningitis cases.

(2) A number of papers of recent date have referred to and discussed the presence of Gram-positive bacilli in the cerebro-spinal fluid of cases of epidemic cerebro-spinal meningitis in which these organisms have been found associated with the meningococcus, and various theories in regard to this possible relationship to the latter have been advanced.

(3) In the cases under review no meningococci were at any time found, either in direct films or on culture media.

(4) All five cases occurred in children, and all within a period of thirteen days.

(5) They occurred before any definite case of epidemic cerebro-spinal meningitis was recognized in this State, and raised a strong suspicion of that disease.

(6) In two of the cases the organism was morphologically indistinguishable from the Klebs-Löffler bacillus, whilst in the other three cases it resembled the Hoffmann type of organism when young, but assumed a markedly segmented form when grown for several days.

(7) The cases occurred during an unduly heavy prevalence of diphtheria, at a period when that disease is normally quiescent.

Five cases of meningitis then occurred in children, all within a fortnight, in which a bacillus of diphtheroid type was the only organism found in the cerebro-spinal fluid, and I have thought it worth while to record the characters of these organisms as far as the limited time at my disposal has permitted me to investigate them.

I do not for a moment commit myself to the extent of claiming that these bacilli of diphtheroid type were the causative agents of the disease in these cases, but I wish for the reasons above stated to place on record their association with the cases.

It is worthy of note that in all these cases the cerebro-spinal fluid showed little turbidity, and that of the cellular elements lymphocytes appeared to predominate. I am aware that such a finding would suggest an infection by the tubercle bacillus, but the rapidity of development, the almost simultaneous occurrence of these five cases, and the rapid spontaneous recovery of one patient are suggestive rather of an acute infective process. No tubercle bacilli were demonstrated in films from the centrifuged deposit. Animal inoculation for the determination of this point was not carried out.

When the cases occurred, I, like most others at the time, suspected epidemic cerebro-spinal meningitis, and on this account fluid was in each case plated upon *nasgar* and put into glucose-ascitic-citrate medium. No growth occurred during the first day or two, and the plates were left in the incubator in the first two instances rather by accident than design. On the fourth day it was found that quite a number of very small colonies had appeared, and these on examination proved to be colonies of Gram-positive bacilli, in one case indistinguishable from the Klebs-Löffler bacillus, and in the other case suggestive of Hoffmann's pseudo-bacillus. When the later cases occurred the prolonged incubation was permitted by design, and it was found that whereas no growth occurred within 48 hours, at a later stage in all cases a growth similar to one or other of these already described occurred.

The five cases then provided respectively:—

(1) The Klebs-Löffler type.
(2) The Hoffmann type.
(3) The Hoffmann type.
(4) The Klebs-Löffler type.
(5) The Hoffmann type.

These organisms were individually sub-cultured on to various media. Their sugar reactions were tested in Hiss's liquid medium, and each was inoculated into a full-grown guinea-pig. The results, in order to save space and for readier comparison, have been scheduled.

The organisms, though in cases very similar in appearance, vary widely in regard to their sugar reactions, are all non-pathogenic to adult guinea-pigs, and do not agree in every particular with any definite type.

According to my results, none is a typical Klebs-Löffler bacillus, and none is a typical Hoffmann bacillus.

In two instances the organism could be detected in films made from the centrifuged deposit. But in the other cases they were found only after incubation. No other organism was seen.

As stated above, these cases presented unusual interest to me, on account of several recent papers I had read upon the presence in cerebro-spinal fluid of Gram-positive bacilli in association with meningo-

cocci. In regard to one of these, namely, a paper by Donaldson in the *Lancet*, of June 26, 1915, I should like to refer to several points of agreement with my own observations, but at the same time to suggest that Donaldson may have made some deductions which have led him to wrong conclusions.

In the first place he describes the finding of diphtheroids in association with meningococci, and this concurrence of the two types has probably had some influence in raising in his mind the question of relationship between the two organisms.

of forms is no more marked than in the case of the Klebs-Löffler bacillus, when stained by Gram's method. With this organism the most extraordinary diversity of forms is found, and one apparently can see what appears to be débris staining Gram-negative and presenting an extraordinary likeness to diplococci. Dr. Donaldson is entitled to retort, however, that they are diplococci, that the diphtheroid bacillus is a stage in the life-history of the meningococcus, or vice versa. Again he describes "Gram-positive dots placed a short distance apart, as if at either end of a short bacillus," as occurring in his films and cul-

Schedule.

Case No.	Morphology.	Gram	Neisser.	Growth on Serum.	Growth on Agar.	Growth on Gelatin.	Growth on Potate.	Growth in Broth.	Litmus Milk.	Animal Inoculation.
1	Segmented	+	+	Diphtheria-like; readily emulsifiable	Gray colonies; feathery edge	Scanty growth. No liquefaction	Invisible growth. No pigment	Medium clear granular deposit	No reaction in 10 days	Non-pathogenic to guinea-pigs
2	At first Hoffmann-like; later segmented	+	+	White flaky growth; readily emulsifiable	White porcelain-like; regular margin	Scanty growth. No liquefaction	Invisible growth. No pigment	Medium clear powdery deposit	Slight acid reaction in 10 days	Non-pathogenic to guinea-pigs
3	At first Hoffmann-like; later segmented	+	+	Gray flaky growth; emulsifies with difficulty	Gray colonies; regular margin	Scanty growth. No liquefaction	Invisible growth. No pigment	Medium clear powdery deposit	Slight acid reaction in 10 days	Non-pathogenic to guinea-pigs
4	Segmented	+	+	Diphtheria-like; readily emulsifiable	Gray colonies; feathery margin	Scanty growth. No liquefaction	Invisible growth. No pigment	Medium clear flocculent deposit	No reaction in 10 days	Non-pathogenic to guinea-pigs
5	At first Hoffmann-like; later segmented	+	+	Gray flaky growth; emulsifies with difficulty	Grayish-white colonies; regular margin	Scanty growth. No liquefaction	Invisible growth. No pigment	Medium clear flaky deposit	No reaction in 10 days	Non-pathogenic to guinea-pigs

Reaction on Sugars and Carbohydrates in Hiss's Medium.

	Glucose.	Mannite.	Dulcite.	Lactose.	Cane Sugar.	Maltose.	Dextrin.	Galactose.	Glycerine.
No. 1	A	—	—	—	A + C	A	—	—	—
No. 2	A + c	a	—	a + c	—	A	—	—	—
No. 3	A	—	—	a + c	A + C	A	—	—	—
No. 4	A	—	—	—	—	A	—	—	—
No. 5	A + C	a	—	—	A	A	—	—	—

A = Markedly Acid. a = Slightly Acid. C = Complete Coagulation. c = Partial Coagulation.

In my cases, though the condition suggested a meningococcal infection, the diphtheroids alone could be found, even where two or three examinations of fluid were made. I do not deny, therefore, that my findings to some extent support his contention. He then describes the marked pleomorphism of the bacillus, a single colony of which shows Gram-positive cocci and bacilli, Gram-negative bacilli and Gram-negative cocci and diplococci, besides many club and "note of exclamation" forms, etc.

I, too, have noted this pleomorphism in the case of some of the organisms isolated from the cases under review, but I feel confident that this variety

tures. These Donaldson regards as a stage or variant of the diphtheroid.

I have also noted these in all my cases, but I have seen them frequently in other preparations where Gram's staining method is used. I regard them as particles of precipitated or undissolved gentian violet, and think that the linking up of the dots by an imaginary line is an optical delusion. Such an illusion, I think, is more especially liable to occur in the case of those in the habit of doing a lot of work with the Neisser stain.

Dr. Donaldson suggests as a result of his findings that the causal organism in cerebro-spinal meningitis

may be a diphtheroid bacillus closely related to the Klebs-Löffler bacillus, and that this organism is extremely pleomorphic, and may give rise to the Hoffmann like forms and to what appear to be meningococci.

Hort, Lakin and Benians (*British Medical Journal*, March 27, 1915) also refer to the pleomorphic nature of organisms found by them in the cerebro-spinal fluid of cerebro-spinal meningitis cases. Shaw (*British Medical Journal*, April 17, 1915) describes a case met with by him in which diplococci with many other forms were obtained from the same colony.

My own experience leads me to believe, however, that many of these strange forms met with may only be involution forms and degeneration débris occurring in connexion with a diphtheroid bacillus whose capabilities in this direction are no new discovery.

Whether, however, they are stages in the life history of other organisms remains to be determined.

On the other hand, I am very much in the dark, and hardly dare to conclude that the organisms described above were the actual infecting agent. They may have merely accompanied into the meninges the real agent, which I have been unable to discover.

I wish definitely to place on record the following facts:—

(1) Five cases of meningitis have occurred almost in the nature of an epidemic among children ranging between the age of two and nine years. The cases suggested strongly epidemic cerebro-spinal meningitis. One patient recovered completely.

(2) No meningococci were discovered in the cerebro-spinal fluid of any of these cases.

(3) A Gram-positive bacillus of diphtheroid type was found in each case.

(4) No other organism was seen, either in direct films of centrifuged deposit, or on cultivation.

(5) In some of these cases (2) the diversity of forms assumed by the bacillus was very marked; in two cases forms staining Gram-negative and indistinguishable from diplococci were seen in films made from a single colony, and these occurred in association with the involution forms of extraordinary complexity and variety, of a Gram-positive bacillus of diphtheroid type.

Reports of Cases.

HYSTERECTOMY FOR A SUPPURATING MYOMA.[1]

By R. Humphrey Marten, M.D. (Cantab.),
Adelaide.

According to Kelly, in certain rare instances myomatous tumours of the uterus become mere shells containing pus. These conditions are extremely rare. He quotes two such cases, and others are mentioned by Lee, Lisfranc, Jonas and Bernays. It is necessary to distinguish this variety, where there is no communication of the capsule with external sources of infection, from the far more common condition of sloughing and suppuration of a polypus.

It is well known that myomata of the uterus are liable to undergo various changes, such as calcareous, cystic, fatty and myxomatous degenerations, also necrobiosis or red degeneration. Sometimes they undergo a telangiectatic change, and, lastly, they are liable to sloughing and suppuration.

Mrs. P., from the country, consulted me on October 19, 1916, for profuse menorrhagia. She was 40 years of age, and gave a history of six confinements, the last child being born eight years ago, and following upon which her present illness commenced. All the confinements were difficult; all the children were born under anæsthesia, and all the deliveries were instrumental, except the second. She lost very considerably with the last child; but it was not described by the doctor in attendance as an actual flooding. After the birth of her last child she noticed the catamenia were increasingly profuse, and lasted longer than formerly, until immediately before the operation they continued for ten days or a fortnight, during which time she passed large clots, but had no pain. For the last year or more she has been losing flesh, becoming more and more anæmic, and suffering from dyspnœa, œdema of the lower extremities, together with inability to carry out her ordinary domestic duties.

On examination, it was noticed that the patient was intensely pale, but her lungs, abdominal organs and renal functions were normal, with no evidence of any disease in her nervous system, except headaches. Her pulse was rapid, generally over 110 to the minute, feeble and easily compressible, with badly-filled vessel. Her heart showed a loud hæmic bruit, but with no signs of enlargement or dilatation. A loud *bruit de diable* was audible in the veins of the neck.

Just above the brim of the true pelvis, a smooth, rounded, freely movable, painless swelling could be felt. Bimanually the cervix was found to be soft, and the os somewhat dilated, admitting the tip of the finger; but nothing in the shape of a polypus could be felt. The cervix was directly continuous with the tumour, which could be felt from above, and was about the size and shape of an emu's egg, freely movable in the pelvis, quite painless and with no detectable nodules upon it. The fornices were both normal. There was no blood on the examining finger, and no history of any intermenstrual bleeding, but a rather profuse, inoffensive leucorrhœal discharge. The patient's temperature was always above normal, ranging between 99° F. and 101° F.

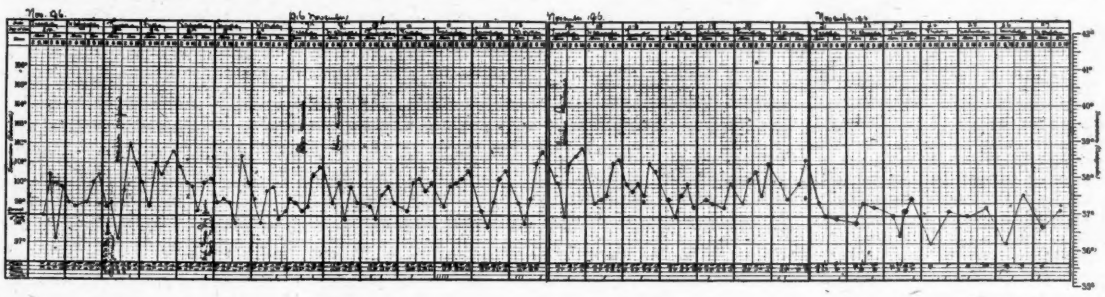
I diagnosed an ordinary fibroid tumour of the uterus, and recommended an immediate hysterectomy; but the patient was highly nervous, and informed me that the last thing she wanted on earth was an operation. She returned to her home in the country, to make up her mind; but at the end of a fortnight, after a most profuse period, telephoned to say she was coming down to the private hospital, with a view to having the operation performed at once.

When admitted on October 31 it was noted that the patient was extremely ill, the temperature being 100° F., and it was decided to let her rest for a couple of days, to enable her to recover from the journey down to town.

On the morning of November 2, Dr. Gregerson anæsthetized the patient, and, with the assistance of Dr. H. Gilbert, I proceeded to do a hysterectomy. Having placed the patient in a medium Trendelenburg position, the abdomen was opened by a paramedial incision, extending from the umbilicus to immediately above the pubes. The little bleeding occurring whilst the incision was being made showed that the blood was extremely watery, and that the patient could stand very little further loss without catastrophe. The uterus was found to be freely movable, with no signs of any old inflammatory trouble in the adnexa, and no adhesions of any sort connected with the organ. Having decided to leave the ovaries, and, following the usual method I adopt, clamps were placed on the left broad and round ligaments in two places, close to the uterus, and the tissues divided, anterior and posterior peritoneal flaps were fashioned, and the bladder pressed out of the way by gauze swabs. The left uterine artery and the accompanying veins were isolated and clamped. The uterus just above the cervix was then divided across to the position of the right uterine artery, and the stump seized with Museux forceps and pulled well up. The opening in the cervical canal was unusually large, easily admitting a finger. The uterus was pulled well over to the right, and was found to be so soft

[1] Read at a meeting of the South Australian Branch of the British Medical Association, on November 28, 1916.

that it easily tore across to the position of the right uterine artery; but no vessels could be found here, and the only artery requiring attention was a small vessel just spouting on the immediate right of the cervical opening. The uterine artery itself was evidently thrombosed and atrophied, and no uterine veins were seen on this side. A clip was placed on where the vessel should have been, and the uterus rolled out of the wound and the broad and round ligaments on the right side clamped and divided, and the tumour removed. The usual ligatures were applied, and the top sewing of the broad and round ligaments carried out. There was practically no hæmorrhage during this part of the operation, probably not more than two or three drachms being lost during the whole procedure. The wound was closed in the usual way with there layers of sutures and three supporting through-and-through silk-worm gut sutures. It was a very simple operation, and the wound was closed in about 25 minutes from the initial incision.



When the uterine cavity was opened up after removal, what appeared to be an ordinary submucous fibroid was found filling it. It was only attached to the fundus and the upper part of the walls, was quite free below, with no signs of sloughing or other degenerative process about the mucosa. The supposed fibroid, on being opened, was found to be a mere bag, containing thick, yellow, inodorous pus, with flakes of lymph. The specimen shows that where the tumour projects towards the cervix the walls are very thin, and that marked thinning has also occurred where the tumour wall is incorporated with the *fundus uteri*. One Fallopian tube has apparently been occluded by the growth of the tumour, the other still has an opening into the uterine cavity, just below the angle of attachment of the tumour.

The report from the Pathologist at the Adelaide Hospital contains the following description: "Sections show the tumour to be a myoma which has undergone necrosis. There is an invasion of the wall by pus cells, suggesting that some bacterial infection had taken place." Unfortunately, no film was made from the fresh pus, and a scraping from the wall since the specimen has been in preserving fluid fails to show the causal organism. The patient is making a perfect recovery as far as the operation is concerned; but her temperature is still raised, from 99° F. in the morning to between 100° F. and 101° F. at night.

Suppuration of a myoma is uncommon when there has been no external interference to infect it, and it is difficult to understand how it should have come about in this case, as the mucous membrane covering the tumour in the uterine cavity was intact, and the Fallopian tubes, although one was occluded, were free from any signs of former inflammatory disease. The right uterine artery was occluded, but whether *post* or *propter hoc* it is impossible to determine. Even supposing it was *propter hoc*, it would not necessarily lead to suppuration.

The entire absence of any signs of old inflammatory trouble, such as adhesions, is peculiar. In some of the instances recorded they have been exceedingly dense and numerous. The abscess in my case would not have contained at the most half a pint of pus, whereas in one recorded case as much as six gallons were evacuated. My own idea is that it was a blood infection; but how it originated it is difficult to determine. Even now, in spite of the removal of the bag of pus, the patient's temperature keeps well above normal; but there are no other secondary manifestations to be found, such as enlarged spleen, joint affections or profuse perspirations.

I would like to draw the attention of members to the ease with which a hysterectomy is done by attacking the left vessels first and then cutting across the uterus and seizing the right vessels as the tumour is being rolled out of the wound. It is extremely useful where there are many and dense adhesions, as they are much more easily attacked from below than from above. The right uterine and ovarian vessels are easily caught, and the ureter is less liable to damage. If I had followed what I believe is the usual practice of gynæcologists here in this case namely, clamping all vessels first, I should not have known of the thrombosis of the right uterine artery. Going straight across from left to right makes the operation much shorter, and carries with it far less manipulation and twisting of the tumour from side to side.

The more you think over this case the more it opens up many very unpleasant possibilities which might have happened. Supposing whilst the patient was home during her last menstruation, the thin lower wall of the abscess had given way and the pus discharged *per vaginam*, the probabilities are that the patient would have got quite well, the tumour would have disappeared, and with it all the patient's symptoms, and my reputation for diagnosing fibroid tumours of the uterus would entirely have vanished from that district. Had any medical man been called in a few days after, and, examining the patient, he would, and on the facts before him quite rightly, wonder what on earth I was up to in recommending a hysterectomy for a fibroid tumour as large as an emu's egg when no such tumour existed. It makes you think that you ought to be extremely careful in even thinking yourself, much less saying anything to the patient or their friends, about a brother practitioner's diagnosis without having all the facts and history of the case before you.

Again, supposing the abscess had ruptured into the abdominal cavity through the thinned fundus and you had been called in to operate for an "acute abdomen," full of pus, and you had found a small perforation discharging thick pus from the top of the uterus, I think you would have been puzzled to determine the *fons et origo mali* of the condition. All the same, it would probably strike you, if you had been so informed, that the medical man, who had diagnosed a uterine fibroid, had gone very wide of the mark, and yet the original diagnosis was correct.

TRAUMATIC SEVERANCE OF THE INFERIOR RECTUS OCULI; SUTURE; RECOVERY.

By **J. C. Halliday, M.B. (Syd.), F.R.C.S. (Edin.),**
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On October 24, 1916, I saw A.A.B., who the day before had caught his left eye upon a piece of hanging wire. On examination, the left eye was turned upwards under the upper lid, and the patient had no power to turn his eye down. Below there was nearly half an inch of the tendon of the inferior rectus still attached to the globe, the free end lying on the patient's cheek. The eyeball was uninjured.

Next morning, under chloroform, administered by Dr. Purser, and with the advice and assistance of Dr. F. Antill

Pockley, an attempt was made to pick up the proximal portion of the muscle and attach it by catgut sutures to the tendon, which was still united to the globe. As proved by the subsequent result, the attempt was quite successful. We were extremely doubtful of doing any good; in fact, a partial result might only make matters worse, by bringing the eye down from under cover of the upper lid and making the diplopia evident to the patient. It was thought best not to tenotomize the superior rectus.

On December 11 the patient returned with a perfect result, the eye being in excellent position with normal motility and showing no diplopia when tested with a Maddox's rod.

As far as I have been able to investigate the literature of eye injuries, no similar case has been recorded.

Reviews.

CANCER PROBLEMS.

The literature of the ætiology, pathology and treatment of malignant disease is so large that small additions to it need not cause dismay, provided that the authors do not require the medical profession to believe some startling new theory or to accept a new revolutionizing mode of treatment. On the other hand, the subject at present is more or less thread-bare, and the critic takes up new publications with a feeling of weariness and disinclination to have to read. The Service Publication dealing with the subject of Cancer Research is composed by Dr. A. H. Thwaites, who has visited America and England, has had a talk with the principal workers in this field of research in both countries, and has written down what he has learned during his travels.[1] There is nothing new in the book. More than that, the account does not even exhaust the data which have been recorded as having some bearing on the ætiology of cancer. Dr. Thwaites has been persuaded by some of the workers on the other side of the Pacific that America holds the field as regards cancer knowledge. The unfortunate part about this subject is that the assumption is made almost universally that malignant disease met with in man and in the lower animals is a single disease entity, and that what is observed in connexion with a mamary carcinoma of the mouse is necessarily true of all other malignant tumours of all species. We may pass the opening portions of Dr. Thwaites's book, in which he tells his readers about his travels. When he reaches page 17 the subject matter is attacked. He advocates attention to three ætiological factors; special developments, he calls them. The first is persistent irritation. No one has yet discovered why one form of irritation, long continued, precedes a malignant growth, while other forms may act for years without this sequel. Many theories have been elaborated; none has satisfied the critical mind. The second point is the "infective origin of at least some types of cancer." He naturally has in mind Rous's work in connexion with sarcomata observed in chicken. The third ætiological factor is heredity. The evidence adduced by the author in regard to Rous's filtrable virus is weak. It is not strengthened by the quotation of opinions voiced by persons of undoubted eminence. An opinion, unsupported by a definite fact, is quite valueless in scientific argument. Concerning heredity neither Bashford's observations on mice with recent and remote cancerous ancestry, nor the very interesting breeding experiments undertaken by Miss Slye with mice prove much concerning the inheritance of cancer in man. Statistical evidence appears to show that heredity does not play an ætiological part, but too much reliance should not be placed on figures, until all statistical enquiries lead to a uniform result.

The author becomes more interesting when he deals with the histogenesis of cancer. The account which he gives of Fischer's work on the injection of *Scharlach Rot* oil is unfortunately culled from Bullock and Rohdenburg's writing, as is his account of the later development of this work. A careful study of the original papers of the various investigators and subsequent repetitions of the many experiments led the majority of British histologists to regard the proliferative changes as something essentially distinct from malignant disease. In this chapter we miss all reference to the plausible theories put forward years ago by Ribbert of an essential inflammatory process in the connective tissue cells, and of that voiced by von Hansemann in regard to the alleged anaplasia of cancer cells. The late Sir Henry Butlin, in common with many other keen observers, regarded the cancer cell as a true parasite, and explained its multiplication by assuming that the tissue cells lost their somatic functions as body cells, and without taking part in any of the work of the organs for the economical metabolism of the body, lived at the expense of the real body cells. Views of this kind have as much claim to the attention of the pathologist as those which deal with hyperplasia pure and simple. Again we miss all reference to the ingenious chemical work carried out by E. Freund, of Vienna. An excellent description of this work was given before the Section of Bacteriology and Immunity of the XVIIth International Congress of Medicine, held in London in 1913.

The author gives a short summary of the so-called immunity of cancer, as evolved by Bashford and Murray. It must be remembered that Ehrlich, who carried out a great deal of work on this subject, warned pathologists as long ago as in 1903 that the tumours which he and the majority of other investigators were dealing with differed in many important respects from those met with in human subjects, and that no one was justified in assuming that what was true of mouse cancers was also true of human malignant disease. The remainder of the work contains but little that is likely to assist an investigator in advancing our knowledge of the ætiology of cancer or in devising new ideas for a promising research.

An understanding of the elements of logic is essential to a postulation of any theory of the causation of disease. If, in its place, a false mode of reasoning is substituted, the conclusions will not carry weight, and even if the truth be arrived at by accident, no one will be aware of the fact. The late Honourable Rollo Russell has been convinced for many years that cancer is preventable, and that its cause has been discovered but not recognized long ago. In a book published after his death, he attempted to establish this cause of cancer and to elaborate his theory of a rational method of prevention.[2] It is well known that cancer frequently follows chronic irritation of certain tissues. The Honourable Rollo Russell believed that it was quite unnecessary to enquire further into the matter, but found in continued irritation the long-sought-for cause of malignant disease. He regarded it unnecessary to "posit some intrinsic cause unknown in these cases." His arguments are in keeping with this wild assertion. He ignored the subtle chemical changes which take place in the tissues altered by cicatricial formation or fibrosis following inflammatory lesions. He was blind to the processes, many of which are but imperfectly understood, which lie between the application of the irritation and the development of that pathological activity of tissue cells which we recognize as malignant. To his mind the irritants, alcohol, tea, coffee, condiments, proteins, bacteria, excess of solid food, heat, acids, etc., sufficed to produce malignancy without any intermediate process. His arguments in support of the contention that alcohol, tea, coffee, hot fluids, much solid and putrefying proteid food are actually causes of cancer would serve excellently as examples of wild assertions unsupported by scientific evidence. For instance, he was satisfied that if cancer was rare in monastries, where a simple, bland and frugal diet prevailed, and was common among peoples enjoying a rich diet and strong drinks, the cause of cancer must be those articles partaken by the one and absent from the diet of the other. It is unnecessary to reply to this kind of argument. The book contains nothing else.

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[1] Report on Cancer Research, by A. H. Thwaites, B.V.Sc., M.Sc., M.B., B.S., Cancer Research Scholar. Service Publication No. 11, Commonwealth of Australia, Quarantine Service; 1916. Published under the authority of the Honourable the Minister of Customs, by Albert J. Mukilett, Melbourne. Royal 8vo., pp. 58.

[2] Notes on the Causation of Cancer, by the Honourable Rollo Russell, with a Preface by Dr. Dawtrey Drewitt; 1916. London: Longmans, Green & Co.; Sydney: George Robertson & Co., Proprietary, Limited; Demi. 8vo., pp. 116. Price, 3s. 6d.

The Medical Journal of Australia.

SATURDAY, FEBRUARY 10, 1917.

A Severe Indictment.

Professor W. J. Simpson, Professor of Hygiene at the University of London and Lecturer in Tropical Hygiene at the School of Tropical Medicine, has drawn attention, in a powerful article in *The Journal of Tropical Medicine and Hygiene* of December 1, 1916, to the deplorable failure on the part of the British Army medical authorities to protect our armies from disease in tropical and sub-tropical countries. He quotes from Lord Derby's speech in the House of Lords to illustrate the amount of disease affecting British troops in Mesopotamia. The admissions into hospital during the period from April 27, 1916, to July 29, 1916, *i.e.*, a period of three months, averaged 2,739 per week and the deaths 108 per week. There were therefore 30,000 cases of sickness and 1,400 deaths among our soldiers in Mesopotamia in three months. In the absence of exact figures he is forced to assume from knowledge current throughout the Empire that a considerable proportion of these cases of sickness were due to cholera, dysentery, enteric fever and other preventable diseases. The Gallipoli expedition, he informs us, cost us 96,000 men put out of action by disease alone. "If instead of 100,000 sick there had been a healthy Army, and not one disabled through sickness, Constantinople would probably have been reached in spite of military blunders." He demonstrates that the equipment of hospitals and the appointment of medical officers, nurses and men is not preventive medicine, and proceeds to emphasize that even if the mistakes of the past are now being rectified, the adage, it is never too late to mend, cannot be applied, since no tardy activity can now save the thousands that have fallen and have suffered. Many of the essentials are now being supplied where they are badly needed, but not all, for he notes that large floating plants for purifying water are still under construction, and will be sent out as soon as they are ready. The remedy is a simple one. It is one which applies to all affairs of life, especially in such a war as the present war. It is to place the matter in the hands of persons competent to utilize knowledge and to carry out in an expert manner those measures which have been proved to be effective. In connexion with the prevention of tropical diseases Professor Simpson suggests the creation of a Board of Tropical Sanitation in the War Office, composed of men of practical experience of tropical hygiene, whose business it would be to maintain healthy armies in the tropical and sub-tropical areas where war is being waged.

It is significant that Professor Simpson speaks of preventable diseases. He is justified in regarding infections, such as dysentery, enteric fever, cholera and typhus as avoidable, even under the unfavourable conditions of war. Australia provided a large number of the 96,000 men who were incapacitated during the Gallipoli campaign, and we have therefore a right to enquire whether the essential precautions are now being taken to prevent a recurrence of so disastrous a state of affairs in those areas where our soldiers are being sent. The blame for the failure in the past is placed on the shoulders of the British Army authorities by Professor Simpson. Are the Australian authorities entirely free from responsibility? The individual members of the medical profession have undertaken duties with the Australian Imperial Forces, and have equipped themselves extremely well. It is unnecessary in this place to refer to any want of organization which may have existed during the early stages of the war in connexion with the general provision of hospital and ambulance units. But it may be in place to ascertain whether the proper measures for safeguarding the health of our troops are being adopted. Treatment is wasteful and disadvantageous under all conditions, but especially in wartime. Prevention is needed. Have we a Board of experts in the preventable infective diseases whose business it is to maintain our soldiers in health? Have we an adequate supply of bacteriologists and hygienists to guide the military men in these matters of such vital importance? We fear that the special departments of the Australian Army Medical Corps are not always placed under the control of men of wide

experience of the tasks to be performed, and we also fear that too often the proper development of a necessary branch of the service is impeded by the fact that those in whose power the establishment of these branches lies have little understanding of the knowledge possessed in the subjects involved, or of the application to which this knowledge can be put.

A STATE MEDICAL SERVICE.

According to the New Zealand newspapers, one Dr. M. R. Rhodes has been talking in the Dominion about the advantages of a State Medical Service. His arguments appear to consist in a statement that preventive medicine is the ideal to follow, and that preventive medicine cannot succeed unless every member of the community is subjected to its practice. He insists that the National Sickness Insurance in Great Britain has failed because it has been based on a wrong principle, namely, that of subjecting individuals to curative medicine. His proposals are that every medical man should become a departmental servant, in receipt of a salary of from £400 to £1,000 per annum. Every member of the community would be required to select his medical attendant, but no doctor should be allowed to look after more than from 300 to 500 families. If a doctor's list became full the individual would be required to choose another doctor. A medical practitioner starting in practice would be drafted to a district where, in the opinion of those responsible for the service, there was most need for him. Dr. Rhodes is convinced that medical men will be delighted to get rid of the irksome necessity of having to keep their accounts and of having to send out bills. The duties of the practitioners would be to look after all their patients during health as well as during sickness, and to apply preventive measures with as much energy as they now apply curative ones. He anticipates the development of an *esprit de corps* in the profession and a spirit of zeal for the good of the public health, and in support of this and similar contentions he refers to a resolution which was passed at the Representative Meeting of the British Medical Association in August, 1916, appointing a committee to consider what steps should be taken to organize public opinion and medical opinion for the advancement of medical and allied sciences. Dr. Rhodes evidently takes himself very seriously, for he has developed his scheme to the point of considering what it would cost.

This sort of clap-trap is likely to appeal to the public, because the arguments used are one-sided, and no mention is made of the obvious defects of a proposal of the kind sketched by Dr. Rhodes. The scheme is not new, and the arguments against its adoption are not new. Dr. Rhodes and those who have gone before him appear to imagine that the modern medical practitioner knows nothing about preventive medicine and that he is entirely out of sympathy with his colleagues in the Public Health Service. He suggests that by making them civil servants they will carry out duties which they neglect under the present arrangements, because their incomes are derived from fees paid for treating people when they are ill. At a now remote period there was an arrangement in China which was ideal from the point of view of preventive medicine. The medical practitioner received payment from his patients as long as they remained well. When they fell victims of disease, this source of income was cut off, and it was then to his advantage to make them well again with the utmost dispatch. This scheme recognized the necessity of curative medicine, but did not destroy the relations between doctor and patient, which have proved to be essential for a satisfactory practice of medicine. Dr. Rhodes appears to forget that not every medical practitioner would work willingly and well if responsible to a governmental department. Many doctors will not submit to a deprivation of their freedom, and if forced into the Civil Service would lose the interest which they take in their work. Dr. Rhodes' statement that if a State Medical Service were instituted everybody would be satisfied, the doctors because their livelihood is assured, the patients because they need not pay directly for medical attendance, and the State because the health of the community would improve, is imaginary. The doctors would not agree to this robbing of their independence, and would struggle against the introduction of the scheme. The patients would soon find out that the practice of preventive medicine involves the adoption of measures which would be so disturbing that they would not confide in their medical attendant. The State would soon realize that the advantages of providing for a large army of salaried doctors are illusory, and that the control of preventable diseases must remain as at present in the hands of the few experts who give their lives to the study of this specialty.

ENTERIC FEVER AND SOIL CONTAMINATION.

An eminent Civil servant in charge of a large institution in which a sewerage system is being installed, has the unpleasant feeling that an epidemic of enteric fever will occur among the inmates "as a result of the disturbance of the soil, germ-laden from past bad hygienic conditions." He appears to consider this unavoidable. It is a visitation of God for the sins of those gone before, yet with praiseworthy foresight he is practicing anti-typhoid vaccination to limit the extent of the evil. An association between outbreaks of enteric fever and considerable excavation of the ground in cities or in places where large numbers of persons have dwelt together for many years has been often noted in Australia by students of hygiene. The provision of a sewerage system necessitating the extensive formation of trenches passing down into the subsoil, has been followed, at times, by an epidemic of typhoid fever. The recognition of the *bacillus typhosus* as an essential agent in the ætiology of the

disease has made it evident that such an epidemic is due to the prevalence of this microbe. It was, at one time, thought that the typhoid germ lived in the soil for long periods, and that the exposure of infective soil on the surface of the ground accounted for outbursts of the disease. Further investigation of the life-history of the typhoid microbe has, however, shown that the organism soon dies out in water or damp soil. In fact there appears to be no evidence that the typhoid bacillus lives for more than a few days outside the animal body except with frequent sub-culture on special media. The discovery of the *bacillus typhosus* in water or soil is now regarded as a sign that this material has been lately infected with typhoid germs from a person harbouring the bacilli. This pollution will have occurred so recently that the source of the microbes should be discoverable by a sufficiently diligent search. From the sanitary point of view this standpoint is of importance. The further infection of the soil or water may be prevented if the original infection be detected.

If epidemics which break out during sewering operations are not due to the unearthing of bacilli from the soil, the organisms must be derived from some human or animal source. By discovering the seat of infection it will be possible to prevent the spreading of the epidemic. The construction of drains on a large scale leads to the employment of many labourers, among whom will be some who are not cleanly in their habits. It only requires the presence of persons infected with the *bacillus typhosus*, among those with dirty habits, to provide the contagion. Human excrement and urine are deposited by uninformed navvies in any convenient place. These places are often accessible to fellow workmen, who spread this dangerous material broadcast with their boots and tools. Flies and dust transfer the germs to the food of healthy people. These occasionally harbour the microbes and form fresh avenues of infection. The conditions are ripe for an epidemic. The provision of suitable latrines for the workmen and the enforcement of strict cleanliness in regard to the disposal of urine and fæces would remove any possibility of an epidemic arising in this way.

TRINITROTOLUENE POISONING.

The handling of certain explosive substances in munition factories is attended by dangers other than those of a possible explosion. For many years it has been recognized that dinitrobenzene, picric acid and tetranitromethylanilin on absorption may give rise to toxic symptoms, especially in persons of unusual susceptibility. The toxicology of dinitrobenzene has been worked out with some accuracy, and hygienists have recognized that degenerative changes of the liver and conversion of hæmoglobin into methæmoglobin at times follow the solution of this substance by the cholesterin fats of the skin and its subsequent passage through the skin. Munition workers have more recently been required to handle trinitrotoluene in large quantities, with the result that many cases of poisoning have been noted, some with a fatal issue. Professor Benjamin Moore and the Medical Inspector of the Factory Department of the Home Office, Dr. T. M. Legge, have investigated this form of poisoning, and publish two important papers on the subject.[1] In order to understand the nature of the poisoning it is necessary to consider the substance from a chemical and physical point of view. It is obtained by a process of nitrification of toluene, a product of coal tar distillation. Toluene is a benzene compound in which one hydrogen group has been replaced by the CH_3 radicle. The nitration effects a further turning out of three other hydrogen groups and their substitution by nitro radicles. The explosive is solid at ordinary temperature, and is usually worked in the state of a fine powder. It melts at 80° C. It is freely soluble in oils and grease, in acetone, ether, benzene, xylene and other fat solvents. It volatilizes readily when in a molten state, and the vapour sublimes on surfaces having a temperature of 70° C. or lower. The munition worker handles fine powder, and may inhale dust or vapour. The deposition of particulate trinitrotoluene on the skin may be followed by a solution of this substance by the fatty substance on the surface of the skin, while its inhalation may lead to a deposition on the mucous surfaces of the respiratory tract. Further, the dust floating in the air, or carried by the hands to the mouth may be swallowed. There is evidence that after solution in the fats of the skin it is capable of passing through the unbroken surface and thence into the tissues. On absorption it appears to combine with some reducing substance, but the combination does not seem to be a very firm one. Under ordinary circumstances the substance is excreted in the urine in combination, and its detection cannot be effected until this combination has been broken down by the action of acids. In the fæces the substance may appear unaltered, having traversed the intestinal canal without absorption. From the sparce evidence available, it would appear that the combined substance is relatively, if not absolutely, harmless. Again, it has been shown by analogy that the skin of some subjects holds it tenaciously; and in these cases there are local irritative effects in the form of rashes, chiefly cheiropompholyx, but little general toxic effect. In other individuals the liver exhibits an affinity for the substance, and the widespread destructive changes (parenchymatous degeneration with interstitial fibrosis) which are seen in these cases suggest that the trinitrotoluene is dissolved in the liver substance free and not in combination with the alleged reducing substance which appears with it in the urine. Similarly the blood corpuscles at times attract it and are subjected to destructive changes. There is no information concerning the effect of lipoids of the central nervous system on the substance. The absence of marked nervous symptoms suggests that it does not reach the brain in a free condition, and that the cerebral tissues have no power to break down the protective combination.

The symptoms of the poisoning include pallor and cyanosis, abdominal distension, jaundice and dyspnœa. Toxic jaundice is very fatal, no less than 33%

[1] *The Medical Press and Circular*, December 13, 1916.

of the patients attacked dying. A strange circumstance is that young persons under 18 years of age are more prone to the poisoning than older persons. The poisoning comes on not less than four weeks after the commencement of the employment, and not more than four months. It must be remembered that the vast majority of those engaged in handling it remain immune from all ill effects. This enables the authorities to introduce an effective prophylaxis. A frequent medical examination, with proper analysis of the urine is essential. Persons under 20 years of age are excluded from the work, and no one is kept at the work for more than a fortnight at a time. Protection of hands, clothes and other objects have been devised to lessen the risk of absorption, and anyone showing the slightest trace of poisoning is immediately removed from the works and placed under treatment. The use of ether or other solvents to remove dust from the skin appears to be advisable.

NO AUSTRALIANS NEED APPLY.

Early in December there appeared in the medical and other scientific press in London the following advertisement:—

> **Medical Research.**—Director wanted, Walter and Eliza Hall Institute of Research in Pathology and Medicine, Melbourne, Australia. Salary £800, with Yearly premium of £75 for retirement in addition. Tenure, five years. Eligible for reappointment. Whole time. Applications by January 24th, 1917, to the Agent-General for Victoria, Aldwych, Strand, London, from whom full information can be obtained.

The establishment of this institution has been discussed in the six States of the Commonwealth, and quite recently we have been informed that the laboratories in the Melbourne Hospital, or part of them not being wanted at present, had been placed by the trustees at the disposal of the Federal authorities to enable the Director of the New Serum Institute to begin his work, without having to wait until the buildings of his own institute have been erected. All this has been communicated to the public and to the medical profession in Australia, but the trustees or their advisers have turned away from the Commonwealth in their search for a competent Director. That there are several men in Australia capable of filling this position with credit to the originators of the scheme and to the Commonwealth there is no doubt. There would be no valid objection to the advertisement of the vacancy both in the old country and here, and the best man applying should be appointed, whether he be English, Scottish, Welsh, Irish or Australian. But we contend that there is no valid excuse for leaving the Commonwealth out of the running altogether. Since the trustees have elected to advertise in the *British Medical Journal* and the *Lancet*, the advertisement should have been offered to *The Medical Journal of Australia*, which is the only medical journal published in the Commonwealth. Since there has been no announcement of the appointment of a Director of the Walter and Eliza Hall Institute of Research in Pathology and Medicine, we assume that the appointment has not yet been made. We therefore venture to suggest to those responsible for the appointment that the date of the final appointment be deferred, and that a suitable notice be inserted in these coloumns, inviting the members of the medical profession in Australia to make application for the position.

Hospitals.

QUEEN'S MEMORIAL INFECTIOUS DISEASES HOSPITAL.

The report of the Board of Management of the Queen's Memorial Infectious Diseases Hospital, Fairfield, Victoria, for the year ending June 30, 1916, has been published in pamphlet form. It is recorded that the late Dr. F. Miller Johnson, who was killed in action at Gallipoli in December, 1915, had been a member of the Board.

The architect's plans for a hospital to accommodate 600 patients were submitted in December, and received the approval of the Board in March. The first section of the work is now in progress, and it is anticipated that the erection of those buildings included in the schedule will be completed in March, 1917. The new administration block will contain all the necessary accommodation, and its erection will admit of the conversion of the present building into an up-to-date laundry. The schedule includes, in addition, new stores, an extension of the kitchen, a new dining block, with maids' quarters above, and new linen store, a dispensary, a discharging block, a nurse's home, a boiler house, and one diphtheria and two scarlatina pavilions, each to contain two wards, as well as cooking plant, laundry plant, electric lighting, a complete sewerage and certain alterations in the adapted laundry.

The Medical Superintendent appends his report, from which the following information is culled. He prefaces his remarks by the statement that the amount of work imposed on the staff during the year was too great to admit of efficiency, and that the inadequate equipment, the lack of accommodation for a sufficient staff and the overcrowding of the patients tended to prevent satisfactory work.

During the course of the year 3,077 patients were admitted into the hospital, and 2,809 were discharged. There were 141 deaths, of which 31 took place within 24 hours of admission. The total mortality is given as 4.68%.

Diphtheria.

The number of patients suffering from diphtheria who were admitted during the year was 2,478. The case mortality works out at 4.79%. If from the number of deaths 28 which occurred within 24 hours of admission be ignored, the mortality becomes reduced to 3.68%. There were 1,681 cases of faucial diphtheria, with three deaths, and the average amount of antitoxin given in these cases was just under 8,000 units. There were 51 cases of nasal diphtheria, with two deaths, 538 of faucial and nasal, with 89 deaths. Pure laryngeal diphtheria was met with 50 times, and five of the patients died. The average amount of antitoxin given in these cases exceeded 18,500 units. In 101 cases both the larynx and the fauces were affected, and seven of the patients died, while in 53 cases the larynx, fauces and nose were affected. Ten of these patients died. Large doses of antitoxin were given in these extensive infections. There were three cases of conjunctival diphtheria without a death, and one fatal case of cutaneous diphtheria.

Of 204 patients whose larynges were affected, 68 were intubated and 11 died. This is equivalent to a mortality of 16.2%. There was only one child under one year of age in the list, and it died. Four out of nine children between one and two years of age died; two out of seven between two and three years of age died; one out of thirteen between three and four years of age died, and two out of thirteen between four and five years died. There were 25 patients over five years of age, and only one, a child aged seven years, died. In 136 patients no operation was performed. Of these, 114 were under seven years of age, and 51 were under three years of age. Eleven of the patients died, the

deaths being distributed in proportion to the number of cases in each age group. Taken together, the intubated and the non-intubated children, it appears that the mortality below one year of age was 40%, at one year of age was 18.7%, and at the succeeding ages up to seven years of age was between 13.8% and 3.7%. It appears that 16 of the 22 deaths occurred within 24 hours of admission.

The complications of diphtheria noted in the patients under treatment included 809 instances of adenitis, 298 of albuminuria, 122 of paralysis, 281 of toxic myocarditis, 49 of profuse hæmorrhage and 47 of petechial rash. In 12 instances the disease relapsed. It was associated with scarlatina 22 times, with varicella 17 times, with pertussis 12 times, with morbilli 3 times and with rötheln twice. A table is given showing the duration of disease at the time of admission. The mortality of cases admitted on the first day of disease was 0.5%; that of cases admitted on the second day of disease was 3.8%; that of cases admitted on the third day of disease was 6.6%; that of cases admitted on the fourth day of disease was 8.8%, and that of cases admitted on the fifth day of disease was 11.2%. The mortality of the cases with admission on the sixth, seventh and later than the seventh day of disease was 21.3%, 14.1% and 22.6%.

Scarlatina.

During the year 417 cases of scarlet fever were under treatment. The treatment was completed in 339 cases. The case mortality is given at 2.81%, eight patients having died. Five of these deaths occurred in children under five years of age, and the remaining three in children between five and ten years of age, notwithstanding the fact that 211 of the 394 patients admitted during the year were over 10 years of age. The most common complications met with were follicular tonsilitis (96 cases), adenitis (68 cases), rhinitis (72 cases), otitis (31 cases), and albuminuria (42 cases). The disease was associated with diphtheria 139 times, with measles once, with whooping cough twice, with chickenpox once, and with German measles once.

Morbilli.

There were 41 cases of measles. Eleven of the patients were under five years of age, and 27 were over 15. One patient, a little girl aged one year died. In four cases the affection was complicated by broncho-pneumonia, in two by colitis, in two by otitis, in one by severe laryngitis, and in one by albuminuria.

Pertussis.

The total number of patients admitted on account of pertussis was 29. Of these, 23 were under five years of age, and six of them died. No deaths took place of children over five years of age. In 21 of the pertussis patients broncho-pneumonia was present, and in 11 there was gastro-enteritis and colitis.

Epidemic Cerebro-Spinal Meningitis.

Four persons suffering from cerebro-spinal meningitis were admitted into the Hospital during the year. One of the patients died, and the others recovered, two after having been transferred to other hospitals.

There remain 136 patients to be classified. These patients were suffering from various infective conditions; eight of them died, three from pharyngitis, etc., three from pneumonia and one each from acute rheumatism and septic dermatitis.

The Medical Superintendent speaks enthusiastically of the value of the isolation block which was opened during the year. He also refers to the extension of the hospital accommodation which is now being effected.

The cost of maintenance and administration amounted to £18,559. Of this sum, £4,649 were expended on provisions, £2,768 on drugs, dressings and apparatus, £2,847 on domestic appliances, £1,036 in respect of establishment charges, £6,215 for salaries and wages, £431 for miscellaneous expenses, and £612 on administration.

We note with satisfaction that the records of the work achieved during the year ending June 30, 1916, have been compiled on a much sounder basis than those included in the previous reports. We congratulate the Medical Superintendent more particularly on having given so useful an account of his experience in the diphtheria wards.

THE PREVENTION AND CURE OF CONSUMPTION.

The annual meeting of the National Association for the Prevention and Cure of Consumption was held in Sydney on January 31, 1917, the Vice-President, Dr. F. S. W. Zlotkowski, in the chair.

In the annual report attention is called to the fact that Sir Philip Sydney Jones and Dr. Klotkowski, as representatives of the Association, had attended a meeting on July 25, 1916, arranged by the staff of the Royal Prince Alfred Hospital for the purpose of considering the advisability of establishing a tuberculosis research and curative institution.

The Executive Committee report that attempts have been made to secure the services of one or two medical men for the work of the dispensary without avail. Dr. E. A. Finchk resigned his position as Honorary Pathologist on October 11, 1916, and as a successor had not been found, samples of sputum had to be sent to the Board of Health for examination. Sister Harris resigned at the end of September after three years of valuable service at the dispensary. At the conclusion of the report the Committee refer in appreciative terms to the work of the honorary medical staff, and of the officials connected with the Association.

In moving the adoption of the report, Dr. Zlotkowski referred to the work carried out at the Anti-tuberculosis Dispensary. During the year 361 new patients applied for treatment, in addition to 91 who were under treatment at the beginning of the year. The total number of attendances was 4,881. The nurse visited 386 patients in their own homes. During the course of the year 42 patients were sent to sanatoria, and four were sent into the country.

The expenditure at the dispensary, including administrative charges, amounted to £525. The income of the Association included a subsidy from the Government of £250, a grant from the Hospital Saturday Fund of £120, one from the Eliza and Walter Hall Trust of £100, and various sundry subscriptions, bringing the total up to £488. At the beginning of the year there was a credit balance of £102, and at the end of the year there was one of £65.

The Chairman remarked on the successful nature of the visiting, more especially in regard to the educational influence which the nurses were able to bring to bear on the patients. He referred to a scheme which he had had in mind for a long time of establishing a convalescent home for children of tuberculous parents. Although the disease is not hereditary, the predisposition toward it was often inborn, and when children grew up in intimate contact with their tuberculous parents, the infection was bound to occur sooner or later. The Government regarded the scheme with favour, but unfortunately had no available funds for the purpose at present. The Government Architect was preparing plans, and when these were ready Dr. Zlotkowski proposed to ask the Committee to approach the Trustees of the Walker and Eliza Hall Trust to carry out the work.

The report was adopted. The office-bearers and members of the committee were re-elected *en bloc*, with the addition of Mr. F. H. Molesworth.

The Minister of Health of New South Wales moved a vote of thanks to the Chairman, and in doing so spoke in terms of high praise of the various ladies and gentlemen who had taken an active part in the work of the Association.

The 270th list of casualties, which was issued on February 2, 1917, contains 703 names. It includes information of the death of four officers and of 133 men. The number of sick is 263, including two medical men, Captain S. R. Burge and Captain H. C. E. Donovan.

The death of Dr. A. E. B. Forster, of Clunes, Victoria, took place on February 2, 1917.

Abstracts from Current Medical Literature.

MEDICINE.

(44) Autolyzed Extracts of Pneumococci in Pneumonia.

E. C. Rosenow and F. H. Falls (*Journ. Amer. Med. Assoc.*, December 23, 1916) have treated 35 patients suffering from lobar pneumonia with injections of autolyzed pneumococci. They point out that autolyzed extracts of pneumococci are extremely toxic at a certain stage of autolysis, but that they lose their toxicity when the process is continued. They found that when injected intravenously. The fully autolyzed extracts were relatively non-toxic. They treated their patients without selection, using doses of 5 c.cm. at first and later of 10 c.cm. At times even double this dose was given. In the majority of the cases a typical temperature reaction occurred. This consisted in a slight rise followed by a fall of from 2° to 6°. The lowest point was reached after about six hours after the injection. At times a secondary rise took place, but the fever rarely reached the same height as before. A second injection did not improve the condition. In 12 cases a rigor was noticed. Six patients died. Five of them were alcoholic subjects, while the sixth was suffering from a *streptococcus mucosus* pneumonia. They noted that the course of the disease in the non-fatal cases was favourably influenced by the injections, and that there was less discomfort than in the non-injected cases. In view of the fact that rigors are produced, and in some cases are very severe, they consider it necessary to study the reaction carefully in order that means may be taken to avoid this occurrence.

(45) Uncinariasis.

W. C. Billings and J. P. Hickey have observed that Orientals admitted into the United States Immigrant Hospital, Angel Island, California, frequently harbour the hook-worm (*Journ. Amer. Med. Assoc.*, December 23, 1916). They have carried out a systematic examination of the stools of these individuals from September 22, 1910, to January 1, 1913, and have found that over 50% contained the ova of *Ankylostoma duodenale* or *Uncinaria americana*. Since these infection are so common they consider it necessary to bear the fact in mind whenever dealing with Chinese patients, and for the purpose of the diagnosing of *uncinariasis* they recount the methods of preparing films from stools, and of recognizing the ova of the common worms. The hookworm ova are readily differentiated in an unstained condition from those of *Strongylus subtilis* by their smaller size, by the fact that both ends are tapered, and by the fact that they contain fewer blastomeres. They are very like the ova of *Strongyloides stercoralis*, which, however, are rarely seen except after purgation. The hook-worm egg has a chitinous shell, which lends to it an appearance of being lined, continuous and definite, and this character enables the observer to distinguish it from the ova of *Ascaris lumbricoides*, which usually have a bile-stained albuminous covering. *Schistosoma japonica* may resemble the hookworm. The embryo as it lies in the ovum is pear-shaped, with a tapering trunk and a sharp-pointed proboscis. It consists of cells containing refractile granules, and its surface is covered with cilia. If the egg be pressed the parasite can be seen moving about inside the shell membrane. In 1915 the authors gave up thymol in the treatment of hookworm disease in favour of chenopodium oil. Their routine treatment for adults is as follows:—At 7 a.m. 60 c.cm. of a saturated solution of magnesium sulphate are given. At 7 p.m. 90 c.cm. of a saturated solution of sodium sulphate are given. At 7 a.m. and at 9 a.m. and 11 a.m. on the following day 15 drops of oil of chenopodium are given on sugar. At 1 p.m. 18 c.cm. of castor oil and 2 c.cm. of chloroform are administered, and a half an hour later a further 30 c.cm. of castor oil. At 2 p.m. the patient is given a cup of tea. The results of this course are said to be satisfactory.

(46) Anterior Poliomyelitis.

R. Whitman (*Med. Record*, December 16, 1916) points out that although the epidemic of anterior poliomyelitis has been exploited in the newspapers the only new thing about it is the general interest which the public is taking in the subject. As anterior poliomyelitis is an acute infectious disease involving the central nervous apparatus, and as paralysis and deformity are its consequences, the success of the treatment must depend to a large extent on the actual causes of deformity. During the acute stage it is impossible to predict what the area of permanent paralysis will be. Repair begins and proceeds rapidly at first after the acute symptoms have subsided, and complete recovery is observed in about 20% of the cases. The author recognizes four causes of deformity: (1) the force of gravity; (2) persistent attitudes; (3) unbalanced muscular action; and (4) weight-bearing and locomotion. He regards the prevention of deformity as the most important part of the treatment, since it is impossible when it exists for normal muscles to act effectively, and for weak muscles to regain their strength. Deformity developes more rapidly than is usually supposed. Its first indication is usually discomfort when an habitual attitude is changed. The means adopted to prevent deformity include passive movement, the alternation of posture and attitude, and the avoidance of those which lead to deformity. At the same time the nutrition of the paralyzed parts must be preserved. Massage, baths, electricity, muscle training, braces, plaster supports or other apparatus, and active exercise of muscles all have their use. The author adds a few words on the operative treatment of established deformity.

(47) Complement Fixation in Gonorrhœa.

T. P. Shupe (*Cleveland Med. Journ.*, October, 1916) points out that the Bordet-Gengou reaction, when applied to the gonorrhœa is much more specific than when applied to syphilis, but it is at the same time a more difficult reaction to apply. It has been shown that the gonococcus family is a heterogenous one, and for this reason a number of different strains should be employed. It has been shown that the amount of antibody produced in the disease is small. The author describes the method which he has employed in a series of over 1,000 cases. He uses the drop method by means of a finely drawn out pipette. Special care is taken in the measurement of the quanaity of amboceptor used. He has found commercial antigens, especially that prepared by Parke, Davis and Co., satisfactory. Each batch has to be titrated. The hæmolytic system consists of an anti-sheep immune serum, fresh guinea-pig serum, and washed sheep's red blood corpuscles. No positive result was obtained unless the patient had been infected with the gonococcus, or had received injections of gonococcus vaccine. The reaction is usually negative during the first five weeks of infection in uncomplicated cases. At times if the gonorrhœa is limited to the anterior portion of the urethra, and subsides in seven or eight weeks a positive reaction may not develope. A positive reaction persisting after clinical cure indicates the presence of a gonococcal focus. The author holds the opinion that these patients are capable of infecting others. A negative reaction following a positive one, in the absence of clinical signs, may be regarded as evidence of cure. He regards the test as a valuable one in gonorrhœal arthritis, acute epididymitis, chronic prostatitis, seminal vesiculitis and posterior urethritis. An uncomplicated stricture does not give rise to a positive reaction.

(48) Late Syphilis.

In order to ascertain the effect of energetic treatment on the frequency of tertiary or late manifestations of syphilis, U. J. Wyle and J. A. Elliott have analyzed 120 cases from various points of view (*Journ. Amer. Med. Assoc.*, December 23, 1916). In 54 of 120 cases there were gummata or nodular ulcerative lesions in the skin; in 29 the mucous membranes, in 25 the bones and joints, and in 22 the viscera were involved. The authors do not find distinct evidence that trauma plays an important part in determining the lesions. The shortest time elapsing between the appearauce of the primary chancre and that of the late manifestations was four months, and the longest time 44 years. In over 33% of the cases the late sequelæ de-

veloped in the fourth year. Late manifestations affecting the central nervous system appeared after a considerably longer period, and as a result the average length of time intervening was ten years. In 55 of the 120 cases no treatment whatsoever was given at the time of infection. In the remaining 65 the treatment was inefficient. They describe the form of treatment employed, and sum it up as being desultory and unintelligently carried out. In view of the fact that 30% of the tertiary lesions appeared before the end of the fourth year they felt justified in comparing their series with a series of cases in which adequate treatment had been carried out at least four years before. The series comprised 40 cases, and in 36 or 90% no sign of recurrence was detected after the lapse of this time, and the majority of the patients were regarded as "serologically cured." In four cases there were symptoms referable to central nervous system involvement. In two of the patients the neural recurrence yielded promptly to treatment. One patient had recurrent mucous patches despite vigorous treatment, and the fourth was an instance of a precocious malignant syphilide. They therefore conclude that intensive treatment with salvarsan and mercury is protective in the majority of cases, and that the occurrence of late sequelæ must be regarded as evidence of insufficient treatment.

NEUROLOGY.

(49) Late Results of Gunshot Wounds of the Head.

According to official instructions, Lieut.-Col. Sargeant and Lieut.-Col. G. Holmes (*Journ. Royal Army Med. Corps*, September, 1916) proceeded to various special and general hospitals in England, and carried out an investigation into the late results of gunshot wounds of the head. They determined the condition of 1,239 patients between two and eighteen months after the infliction of the wound, of which they had full notes in 610 cases, and (1) they found in regard to mortality that 46 patients, or 3.7%, had died, most commonly from spread of infection. Thirty-four had been operated upon before evacuation to England; 11 had succumbed after operation, primary or secondary, in England, and in no case in this fatal series had the *dura mater* not been either lacerated by the wound or opened by operation. (2) In regard to physical disabilities, the investigation confirmed previous observations to the effect that much of the paralysis, and other disablement seen in the early stages, was due not to local destruction of the brain but to concussion, œdema and vascular disturbances, which often extended widely beyond the primary injury, and although it was impossible to deal with disabilities statistically, it could be stated in a general way that since improvement was slow and continuous over long periods, it might be expected that a considerable proportion of men with even severe head injuries would be able to lead useful and active lives. (3) It had been surmised that a large proportion of men surviving severe cerebral injuries would be subject to serious complications or sequelæ, particularly insanity and epilepsy; happily, however, this was not the case. Some mental dulness, loss of memory, irritability or childishness, in the early stages, tending to disappear, was common, but serious disorder necessitating confinement under certificate was surprisingly rare. During a period of twelve months only eight patients with mental symptoms ascribed to head wounds were admitted to the Napsbury Hospital, the special hospital to which all cases of insanity attributable to service conditions were sent for observation and disposal. Concerning epilepsy, the comparative rarity of generalized or Jacksonian epilepsy in the early stages of head wounds had been surprising, and even in the later stages fits had been as yet less common than had been feared. The general incidence figured at 6%, and usually the wound had been a very severe one. The practice of giving bromide to all serious cranial injuries until the wound was healed, and for some months after, was commended. Other neurological complications, such as various forms and degrees of paralysis, sensory and motor, due to the primary cerebral injury, or to further damage by septic infection, or by hernia, or in the course of treatment, were naturally very common; so also were headache and neurasthenic symptoms, but these, while incapacitating for further service, were recoverable. (4) A number of men with penetrating or perforating gunshot injuries had reached England with the wounds still open, but they healed so rapidly that the writers had notes of only 19 cases in which the wounds remained open three months after, and of only four in which they were unhealed six months after infliction. The total death percentage of cases of cerebral hernia was 24.16, which proclaimed its seriousness as a complication. (5) The fate of these men sent to England with the missile still in the brain was carefully considered, and it was shown that many with foreign bodies lodged deeply in the brain, recovered, and were scarcely more liable to serious complications than men in whom the brain had been merely exposed and lacerated. An operative measure which might involve spread of infection or further destruction of brain tissue, was consequently inadvisable. It was also concluded in regard to radical operations at the front, that it was extremely doubtful whether surgical intervention other than that necessary for the draining and healing of the wounds, diminished appreciably the risk of later complications, or could modify, except in a harmful direction, the course of these cases from the functional standpoint. Every possible step, however, should be taken to prevent the development of *hernia cerebri*. Taken as a whole the report showed that the later results of head wounds seemed to be much more satisfactory than had been generally suspected.

(50) Defense and Muscle Reflexes.

Weisenberg (*Journ. Nerv. and Ment. Dis.*, September, 1916), to determine the value of the defense reflexes—of which the reflex associated with the name of Babinski forms a part—investigated a series of cases, including 30 of myelitis, four of disseminated sclerosis, and many hemiplegics. He thought that the pathological reflexes of defense had no distinctive diagnostic value, for instance, in a cord lesion they would not show whether irritation or compression existed. Muscle reflexes, on the other hand, gave important information. By a muscle reflex was meant the response of either the whole or a part of a muscle when its body was tapped. Such a response occurred, though not distinctly, in a normal individual, and was exaggerated in the presence of pyramidal lesions, holding equal importance with increased tonicity and increased tendon reflexes. In a completely destructive lesion of the spinal cord the reflex was absent, or diminished in muscles corresponding to the level of the lesion, but might be increased in muscles supplied from just above the lesion, and would certainly be increased in muscles supplied from below the lesion, even though the skin and tendon reflexes might be lost. In an incomplete spinal lesion the reflex would be exaggerated as far as the upper limit of the lesion. In a paralysis gradually extending upwards, such as was produced by pressure myelitis, the exaggeration of the reflex would keep pace with the increase of the paralysis, and be an indication of the extension of the lesion. Finally, the state of the muscle reflex was significant of the state of the reflex arc in the spinal segment corresponding to that particular muscle; and, the reflex was of value in spinal localization.

(51) Injection of Facial Nerve for Facial Spasm.

Dorrance (*Journ. Amer. Med. Assoc.*, November, 1916) describes what is claimed to be a new method of injecting the facial nerve for fascial spasm. A stiletted needle, 10 cm. long and 0.4 cm. thick, graded in centimetres, is inserted at the angle of the jaw and directed backward and upward until the point impinges upon the base of the mastoid bone, as can be felt with the finger; then the point is depressed and pushed backwards and inwards into the stylo-mastoid foramen. If the nerve be hit successfully the injection of a few drops of alcohol (70%) causes immediate facial paresis, and when this is seen, 2 c.cm. more of alcohol are injected. Writing of results the author states that most patients would willingly exchange a spasm for a paralysis; that the paralysis is only temporary, and that when movement returned spasm usually does not recur. Guiding illustrations are given.

Public Health.

THE HEALTH OF NEW SOUTH WALES.

The following notifications have been received by the Department of Public Health, New South Wales, during the week ending January 27, 1917:—

	Metropolitan Combined District. Cs.	Dths.	Hunter River Combined District. Cs.	Dths.	Rest of State. Cs.	Dths.	Total. Cs.	Dths.
Enteric Fever	12	0	3	0	40	1	55	1
Scarlatina	35	0	2	0	17	0	54	0
Diphtheria	47	0	1	0	34	0	82	0
Cerebro - spinal Meningitis	3	1	1	1	0	0	4	1
Poliomyelitis	1	0	0	0	0	0	1	0
*Pulmonary Tuberculosis	22	5	2	0	3	2	27	7

* Notifiable only in the Metropolitan and Hunter River Districts, and, since October 2, 1916, in the Blue Mountain Shire and Katoomba Municipality.

THE HEALTH OF VICTORIA.

The following notifications have been received by the Department of Public Health, Victoria, during the week ending January 28, 1917:—

	Metropolitan. Cs.	Dths.	Rest of State. Cs.	Dths.	Total. Cs.	Dths.
Diphtheria	45	0	21	0	66	0
Scarlatina	5	0	9	0	14	0
Enteric Fever	8	0	21	1	29	1
Pulmonary Tuberculosis	19	3	13	4	32	7
Cerebro - spinal Meningitis	0	—	2	—	2	—

INFECTIVE DISEASES IN QUEENSLAND.

The following notifications have been received by the Department of Public Health, Queensland, during the week ending January 27, 1917:—

Disease.	No. of Cases.
Enteric Fever	20
Puerperal Fever	2
Diphtheria	31
Scarlatina	3
Pulmonary Tuberculosis	10
Erysipelas	3
Ankylostomiasis	6
Malaria	2

THE HEALTH OF SOUTH AUSTRALIA.

The following notifications have been received by the Central Board of Health, Adelaide, for the week ending January 27, 1917:—

Disease.	Adelaide. Cs.	Dths.	Rest of State. Cs.	Dths.	Totals. Cs.	Dths.
Pertussis	1	0	36	0	37	0
Diphtheria	2	1	20	0	22	1
Morbilli	1	0	17	0	18	0
Pulmonary Tuberculosis	0	4	14	10	14	14
Enteric Fever	1	0	11	1	12	1
Scarlatina	0	0	3	0	3	0
C'bro-Spinal Meningitis	1	0	1	0	2	0
Erysipelas	1	0	0	0	1	0
Puerperal Fever	1	0	0	1	1	1

THE HEALTH OF TASMANIA.

The following notifications have been received by the Department of Public Health, Tasmania, during the week ending January 27, 1917:—

Disease.	Hobart. Cases.	Country. Cases.	Whole State. Cases.
Diphtheria	1	4	5
Enteric Fever	2	2	4
Pulmonary Tuberculosis	1	2	3
Scarlatina	0	1	1
Cerebro-spinal Meningitis	0	2	2

INFECTIVE DISEASES.

Two bulletins of the Quarantine Service have been issued in January, on the 5th and 19th respectively. The following is a summary of the information contained.

Variola.

There have been no cases of small-pox reported in New South Wales from December 22, 1916, to January 18, 1917. On January 11, 1917, S.S. *Eastern* arrived at Brisbane from Hong Kong, after having called at various ports. On arrival it was found that a member of the crew was suffering from variola. The patient and a Chinese attendant were isolated at the Quarantine Station, Lytton, and a number of the passengers were also landed in Quarantine. Vaccination was carried out, and the vessel was permitted to proceed in quarantine to Sydney. The usual disinfection measures were adopted.

There were 34 cases of small-pox and 13 deaths reported in the Dutch East Indies since the last issue of the Bulletin of the Quarantine Service in 1916. A Bill of Health issued in Hong Kong contains information of 89 cases and 62 deaths during the week ending December 22, 1916. In the Straits Settlements there were two cases with one death early in November. Four cases of varioloid have been reported during the period from November 18 to December 16, 1916. There were no deaths.

Plague.

The number of cases of plague notified in India between November 12 and December 9, 1916, was 26,168. In the same period 19,033 deaths from this disease occurred.

In Ceylon 23 cases were reported between November 12 and December 9. There were 37 additional cases in Java, and 34 deaths since the issuing of the last report. In Egypt there were four cases notified between November 10 and November 30, and one death.

There were 7 cases and 7 deaths between December 25 and January 8 in the Straits Settlements, and in the week ending December 9, 1916, 1 fatal case occurred in Hong Kong.

Cholera.

During the period from November 18 to December 16, 1916, 223 cases of cholera with 65 deaths were notified in the Philippine Islands. There were 20 cases with 8 deaths during the three weeks ending December 8, 1916, at Nagasaki in Japan, and six cases reported on December 23, 1916, at Kobe, Japan. One case has been reported in the Dutch East Indies since the issue of the last Bulletin.

Typhus Fever.

The distribution of typhus fever during the period from November 11 to 24, 1916, is as follows. The information is culled from the public health reports of the United States Public Health Service:—

Place.	Cases.	Deaths.
Austria-Hungary	727	4
Mexico	334	1
Egypt	235	112
Turkey in Asia	23	11
Germany	16	12
Great Britain	3	2
Netherlands	3	—
Russia	3	1
Jamaica	1	—
Sweden	1	—
Greece	—	8
Spain	—	1

THE INSANE IN QUEENSLAND.

The report of the Inspector of Hospitals for the Insane (Queensland) for the year 1915 comprises a report of the Medical Superintendent of the Goodna Asylum, the report of the Medical Superintendent of the Toowoomba Asylum, and the report of the Medical Superintendent of the Ipswich Asylum, and a general summary.

Hospital for the Insane, Goodna.

During the year 1915 358 persons were admitted to the Hospital for the Insane, Goodna. On January 1, 1915, there were 1,397 inmates. During the year 251 persons were dis-

charged or transferred, and 135 died. The average number of patients in the Hospital was 1,368. On December 31, 1915, there were 1,369 names on the books, 29 of which were of persons on leave.

Of the 358 persons admitted 234 came from the reception houses, and 124 from their own homes. The Medical Superintendent calls attention to the fact that while there has been an increase in the number of admissions during the five years from 1909 to 1914, there was a marked falling-off in 1915. He attributes this in part to the effect of the great war on the State. When money is plentiful excessive drinking is common. Excessive drinking, especially in those whose mental condition is not stable, and other excesses contribute to the incidence of insanity. In regard to the age of the patients on admission, he points out that two were between five and ten years, seven were between 10 and 15, and 19 were between 15 and 20. Nineteen were between 70 and 80, and two were between 80 and 90. Of the remainder the greater number were in the third and fourth decades, and a marked falling off was not reached until the seventh decade. The Medical Superintendent emphasizes the fact that while in previous years stress of life demanded a heavy toll as regards mental diseases among those in the fifth decade, this is not marked in the figures for the year under review. He attributes this again to the necessity of retrenchment resulting from the war and from the drought. He also deals with the question of the importance of marriage in its relation to insanity. He holds that a civilized State should intervene and decide for the individual whether he or she may be allowed to be the parent of future generations.

He has little to say in regard to the occupation of the patients admitted. Manual labour is well represented among the male patients, and domestic duties among the females.

Concerning the causes of insanity the Medical Superintendent adopts the usual practice of classifying under two headings, viz., predisposing and exciting causes. Under the former rubric a previous attack is entered 86 times. The majority of these patients were suffering from one of the varieties of maniacal depressive insanity and mania *a potû*. Heredity is represented 69 times. He points out that each year he feels more convinced that the heredity figures do not really reflect the frequency of a hereditary predisposition to insanity. Congenital causes were responsible for 35 attacks, while senility is entered 49 times. In the last place the conditions associated with the climacteric period appear to have given rise to insanity in 11 cases. The exciting causes are more varied. Under the subheading "moral," war is given as a cause in 23 cases, domestic trouble in 21, financial worry in 9, and loneliness in 7. Of the physical causes, bodily ill-health heads the list with 100, but as this includes several kinds of chronic disease, the Medical Superintendent prefers not to regard it as a single cause. Alcohol was traced as a cause in 84 cases. This number does not include those cases of alcoholism in which the drinking was considered to have been a symptom of the onset of insanity. He points out, however, that the alcohol probably intensified and hastened the attack in these cases, and might be regarded as an exciting cause. In 23 cases epilepsy was regarded as a cause, and in 18 the puerperal condition. There were two cases which were attributed to opium taking, and two to the effect of an operation. Syphilis is mentioned as an exciting cause in eight cases. Only once was the disease in an active, contagious stage.

In regard to the form of mental disease from which the patients admitted during the year were suffering, it appears that some form of maniacal depressive insanity was present 222 times. There were 26 cases of acute mania and 13 of acute delirious mania, 17 of simple mania and 3 of chronic mania. Forty-two patients were suffering from recurrent or alternating insanity, 22 from confusional or stuperose insanity, 12 from delusional insanity, and 20 from insanity connected with pregnancy, parturition and the climacteric period. There were 27 cases of acute or chronic melancholia, and 38 of secondary dementia. There were 38 cases of mania *a potû*, 34 of the patients being males. In 36 instances there was senile dementia, and in 11 there was *dementia praecox*. Paranoia was met with three times, and general paralysis of the insane three times. In 9 cases the insanity was associated with acquired epilepsy, and in 22 it was congenital.

The bodily condition of the patients on admission is usually unsatisfactory. During the past six years 45% of those admitted were said to be in bad health, and a further 31% in indifferent health. The proportion of those in bad and in indifferent health admitted during 1915 was somewhat higher than the average. The Medical Superintendent regards the defective physical condition of these patients as an indication of their mental disease.

During the course of the year 177 patients, including 104 men and 73 women, were discharged from the Hospital as recoveries. The number of recoveries in 1914 was 210. The recovery rate, which is expressed as a percentage of the total number of patients admitted, was 49.44, as compared with 47.83 in 1914. The improvement appears to have affected females more than males. More than 50% of the recoveries took place within six months of admission, while 137 out of 177 were discharged within 12 months of admission.

A certain number of patients whose progress to recovery is advanced are permitted to leave the Institution on trial. During the year 147 persons were granted this leave, and to this number must be added 16, which represents the number of patients on leave on January 1, 1916. In 81 cases the patients were discharged without readmission to the Hospital, and in 50 cases the patients were readmitted; 3 of the patients died while on leave, and 29 remained on leave at the end of the year.

The number of deaths in the Institution was 135. The death-rate was therefore 9.86%. The death-rate among the males was considerably lower than among the females. Sixteen patients died within one month of admission: 50 patients died within 12 months of admission. Two of the patients who died had been in the Hospital between 15 and 20 years, and 6 had been inmates for over 20 years. In regard to the age of the patients at the time of death it appears that seven were under 15 years, and four were between 15 and 20. The successive decades were represented by numbers varying between 13 and 25 up to the eighth decade. Eleven of the deceased were between 80 and 90 years of age.

In regard to the causes of death, diseases of the nervous system are entered 38 times. Thirteen of the patients died of general paralysis of the insane; nine of the exhaustion of mania, and eight in the *status epilepticus*. Twenty-two of the patients died of diseases of the cardio-vascular system, including cerebral hæmorrhage. There were 20 deaths from respiratory diseases, including three from pulmonary tuberculosis. Of other infective diseases we find enteric fever entered ten times, tubercular peritonitis once, syphilis once, filaria once, septicæmia and erysipelas once. There were two deaths from cancer and one from Addison's disease. Two cases of suicide occurred. One patient threw herself into the river at night time, and another person on leave under the care of relatives took poison.

Five male patients escaped, but all were recaptured within three days.

In December, 1914, there were six cases of enteric fever in the Hospital. In the following month 16 cases occurred, while in February there were 3, and in March there was 1. The epidemic was stemmed by the inoculation of all the patients in the block. Of the 26 male patients who suffered from enteric fever four died, but in one case death was due to abscess of the brain, and in another to the exhaustion of mania. Two of the 14 female patients died. Inoculation was offered to the nurses dealing with the enteric fever patients. Only a few availed themselves of this opportunity. Three of the nurses contracted the disease, but all recovered.

The total expenditure during the year was £560,239. The gross cost per patient per year was £41 2s. 2d., and the net cost £35 14s. 5d.

Hospital for the Insane, Ipswich.

The Medical Superintendent of the Hospital for the Insane, Ipswich, publishes a short account of the work undertaken during the year 1915. At the beginning of the year there were 294 patients in the Hospital, and during the course of the year 60 patients were transferred from the Hospital at Goodna. Of the 354 patients two recovered, 26 died, and 326 remained in the Hospital on December 31, 1916. It appears that the cause of insanity in 42 of the 60

transferred patients was unknown. In five cases opium was ascertained as an exciting cause, in one the exciting cause was epilepsy, in one it was alcohol, and in two sexual excess. The duration of residence in the two patients discharged during the year was between one and two years and between three and five years respectively. Of the patients who died one had been in the Hospital under one month, six under one year, and six over ten years. Among the causes of death there were single instances of acute pneumonia, abdominal tuberculosis, and echinococcic cysts of the peritoneum. There were two cases of pulmonary tuberculosis, and one of hæmoptysis, two of fatty degeneration of the heart, and five of chronic valvular disease of the heart.

The majority of patients transferred were in good bodily health. In regard to the form of mental disease chronic mania is entered on the table 21 times, sub-acute mania 6 times, and recurrent mania twice, senile dementia 14 times, melancholia 4 times, delusional insanity 4 times, paranoia 4 times, stupor, alternating insanity, maniacal depressive insanity, and epileptic insanity once each, and insanity of the lactation period also once. The gross cost per patient per year was £48 0s. 5d., and the net cost £42 12s. 6d.

Hospital for the Insane, Toowoomba.

The Medical Superintendent of the Hospital for the Insane, Toowoomba, publishes a short report. During the year 82 patients were admitted to the Institution. On December 31, 1914, there were 757 patients under treatment. The total number of patients discharged was 52, and in addition 41 patients died. The average number of patients in the Hospital worked out at 751. Of the 82 persons admitted 58 were new cases, 13 were readmissions, and 11 were transferred from the Hospital at Goodna.

A table is drawn up setting forth the causes of mental disease in the patients admitted during 1915. Moral causes predisposing to insanity were ascertained 9 times, and moral causes determining the mental disease 7 times. Physical causes were recognized 11 times as predisposing to insanity, and 30 times as determining the attack. Intemperance in drink was regarded as an ætiological factor 11 times. Epilepsy was held to be the cause in 7 cases, privation and overwork in 4 cases, and bodily disease in 9. There were 4 cases ascribed to old age, 3 to parturition, lactation and the menopause, and 1 to venereal disease. A history of heredity was obtained four times, and congenital defects were detected the same number of times. The condition of the patients' bodily health was apparently good in 26 instances, was indifferent in 24, and bad in 21.

In a further table the Medical Superintendent records the form of insanity from which the various patients admitted were suffering from. There were 33 cases of mania, 24 of melancholia, 6 of epileptic insanity, 4 of congenital mental deficiency, 3 of dementia, and 1 of general paralysis of the insane.

The death-rate calculated on the average number of patients resident in the Institution was 5.46%. Of the 41 deaths 10 were due to pneumonia, 8 to renal disease, 5 to diseases of the nervous system, 4 to cardiac disease, 4 to senile decay, 3 to diseases of the digestive organs, 2 to pulmonary tuberculosis, 2 to influenza, 2 to cancer, and 1 to suicide. Three of the patients died within one month of admission, while 6 died after having been in the Hospital for periods varying between 32 and 50 years. The average age at death was 60.

There were 52 patients discharged. Of these 36 were tabulated under the column "recovered," and 15 under the column "relieved." The age of the patients who recovered varied between 15 and 80. In 29 out of 36 persons recovery took place in the third, fourth and fifth decade. Twenty-seven of the patients recovered after detention for periods up to nine months. One patient was in the Hospital over seven years before recovery ensued, and two over five years.

Reception Houses.

In his special report the Inspector of Hospitals for the Insane deals with the constructional aspect of these institutions, and with various matters of administrative importance. He also deals with the work carried out in the three Reception Houses. During the year 289 persons were admitted to the three Reception Houses. Only on rare occasions were any of these patients detained for over a month. At the South Brisbane Reception House one person was under observation on January 1, 1915, and 148 were admitted during the year. Seventeen were discharged, 16 as "recovered," and one as "relieved." Various medical practitioners have acted as medical officers during Dr. Espie Dods's absence on active service.

At the Rockhampton Reception House there were three patients under observation on January 1, 1915. The number of persons admitted during the year was 56, of whom 19 were discharged "recovered," 38 were transferred to Goodna Asylum, and 2 remained under observation at the end of the year. Dr. Voss continued to act as Medical Officer, and Dr. Murphy had been appointed Superintendent, on the resignation of Dr. Macdonald. The number of patients under observation in the Townsville Reception House on January 1, 1915, was 5. During the year 85 persons were admitted. Sixteen persons were discharged, 4 "relieved," and twelve "recovered." Two persons died. The number of persons transferred to the Goodna Asylum was 64, and the number still under observation at the end of the year was 8.

Incidence of Insanity in Queensland.

In the year 1874 there were 300 persons who had been certified as insane in the State of Queensland. Of these 187 were males, and 113 females. This number represented 1.83 insane persons in each 1,000 of the community. The frequency of insanity as measured by the number of persons certified increased slowly from 1874 to 1907, when the proportion was 3.95 per 1,000 of population. In the earlier years insanity was slightly more prevalent among males than among females. In 1907 the proportion of insane males per 1,000 of the male population was 4.27, while the frequency among females was 3.20. Since 1907 the total figures have increased very little, while the actual frequency of insanity in the population has decreased. In 1915 1,547 males and 894 females, making a total of 2,441, were certified to be insane. The proportion as far as the males were concerned was 4.28 per 1,000, and as far as females were concerned was 2.80 per 1,000. Taking both sexes together the incidence of insanity is expressed by the figure 8.58 per 1,000 of population.

A comparison is drawn between the figures for the six Australian States and for New Zealand. The lowest incidence of insanity at the end of 1915 was in Tasmania, where it stood at 2.62 per 1,000 of population. South Australia came second with 2.87, Western Australia came third with 3.16, Queensland came fourth with 3.58, New Zealand came fifth with 3.78, New South Wales came sixth with 3.79, and Victoria came last with 4.13.

A very different picture is drawn when the number of persons admitted during the year to the hospitals for the insane is expressed per unit of population. The unit chosen is 10,000. Here again Tasmania has the lowest figure, namely, 3.43. Western Australia comes second on this list, 5.74 being its figure. South Australia is closely followed by Victoria, the figures being 6.00 and 6.05 respectively. The proportion in Queensland was 6.30; that in New Zealand 7.18, while the largest proportion of all, namely, 7.20, was in New South Wales.

The report contains various other information of interest and a number of excellent photographs of the different hospitals dealt with.

Vital Statistics.

SYDNEY AND NEWCASTLE.

The report of the Government Statistician on the vital statistics of the metropolis of Sydney and of the Newcastle district for the month of December, 1916, have been published in the Government *Gazette* of January 12, 1917.

Sydney.

During the month of December there were registered in the metropolitan district of Sydney 1672 births. This number is 111 less than the average for December during the period 1911 to 1915. There were four more boys born

than girls. The birth-rate is equivalent to an annual rate of 26.3 per 1,000 of population. This rate is 6.2% below the average for the corresponding month in the preceding five years. On the other hand, the actual number of births is greater than the number registered in December, 1915, and the average is greater than the average for December since 1907. The total number of births registered during the fourth quarter of the year was 5,157, as compared with 4,852, which was the figure for the corresponding period in 1915. The average for the fourth quarter since 1907 was 4,604. The highest figure in this period was 5,858 in 1912, and the lowest 2,661 in 1907.

Of the 1,672 births registered during December, 1916, 107 were of illegitimate infants. The illegitimate birth-rate was equivalent to an annual rate of 1.68. The equivalent rate has averaged 2.10 in the previous five months of December. The number of illegitimate births registered in the fourth quarter of 1916 was 340. There has been a fairly steady decline in the number during the corresponding period since 1907. The figures for 1914, 1915 and 1916 have not varied.

The number of deaths registered during December, 1916, was 643. While the number of males born was practically the same as that of females, the number of males who died was 49 more than that of females. The death-rate, expressed as an annual rate, was 10.11. This rate is a low one, and compares favourably with those of the previous five years. The death-rate for the quarter was 2.54 per 1,000. In the fourth quarter of 1914 it was still lower, viz., 2.35, and in 1909 it was 2.51, but in all other years since 1907 the death-rate for the last quarter was consistently higher. The number of infants under one year of age who died in December was 128. In December, 1910, it was also 128. In December of each year since 1907, with these two exceptions, it has varied between 134 and 186. Expressed as an infantile death-rate it was 77 per 1,000 births. The rate for the quarter was still lower, viz., 63. In the fourth quarter of 1914 it was 64, while in the same quarter of the following year it had risen to 112. Four persons of over 90 years died during the month of December. It is stated that 47% of the deaths registered during the month took place in hospitals and other public institutions.

Concerning the causes of death the tables give the following information. There were 107 deaths due to affections of the cardio-vascular system, including 61 cases of organic disease of the heart, 29 of cerebral hæmorrhage, 8 of atheroma, 3 of acute endocarditis, 2 of angina pectoris, and one of aneurysm, etc. Associated with these vascular changes may be cited some of the 35 deaths from Bright's disease, and possibly one or more of the 3 deaths from cirrhosis of the liver.

The most fatal of the infective processes was gastro-enteritis. In all there were 73 deaths from this cause; in 57 the patients were under two years of age. Next in order comes tuberculosis, of which there were 44 fatal cases. In 32 the disease was of the lungs. There were 21 deaths from lobar pneumonia, and 13 from broncho-pneumonia. Pertussis caused 16 deaths, epidemic cerebro-spinal meningitis 7, enteric fever and scarlatina 5 each, septicæmia 4, acute endocarditis, diphtheria and acute neuritis 3 each, morbilli, influenza, acute rheumatism and erysipelas 2 each, and dysentery, tetanus and syphilis 1 each.

There were 68 deaths from cancer, 7 of diabetes, and 3 of leucæmia. Eight deaths are entered under the heading "puerperal condition," including 3 from puerperal septicæmia, and one from an allegal operation. The causes of deaths registered during the fourth quarter are also appended. From this we learn that there were 343 deaths directly associated with disease of the heart or vessels. This number is greater than the average number of deaths from the same causes in the corresponding quarter of the previous five years. An increase is also recorded in connexion with deaths from cancer, the figures for 1916 (last quarter) being 194, and for the average for the corresponding quarter in the preceding five years 177.1. Of the infective conditions tuberculosis killed 124 persons in the December quarter of 1916, as compared with the average number of 144.1. Pertussis was fatal 55 times. In the previous periods the deaths averaged 19.5. Pneumonia was fatal 74 times, and broncho-pneumonia 41. The comparative figures given are 68.2 and 36.8. The number of deaths from diarrhœa and enteritis was 129. The average number of deaths from the same cause in the fourth quarter during the five preceding years was 291.8.

Of the other causes of death mention may be made of the fact that epidemic cerebro-spinal meningitis killed 24 persons in the quarter, enteric fever 10, scarlatina 10, diphtheria 15, and septicæmia 10. There were 30 deaths connected with the puerperal condition.

Newcastle.

In the Newcastle district 165 births were registered during the month of December. Of the infants born, 88 were males and 77 females. The birth-rate is equivalent to an annual rate of 33.72 per 1,000 of population. The number of illegitimate infants was seven, and, consequently, the illegitimate birth-rate was equivalent to an annual rate of 1.44. The birth-rate for the fourth quarter of 1916 was equivalent to an annual rate of 38.

There were 59 deaths registered during the month and 196 during the quarter. The death-rate for December, expressed as an annual rate, was 12 per 1,000 of population, and for the quarter it was 13.36. Both the birth-rate and the death-rate for December are below the rate for December, 1915. The former is slightly higher than the average for the corresponding month during the past ten years, while the latter is slightly lower. There were 17 deaths of infants under one year of age during December, 1916. The infantile death-rate was therefore 103 per 1,000 births. The mean rate for December since 1907 was considerably higher, but the average was markedly disturbed by the very high rate of 223 in December of 1909.

The causes of death are given for both the month of December and the fourth quarter of the year. The figures for the month are necessarily small, and are therefore less instructive than those for the quarter. The number of deaths due to affections of the cardio-vascular system during the quarter was 32. Of the infective processes diarrhœa and enteritis head the list with 29. There were 11 deaths from pneumonia and 5 from broncho-pneumonia, 9 from tuberculosis, 5 from pertussis, 2 from enteric fever, and 1 each from influenza, dysentery, tetanus, septicæmia, acute endocarditis and puerperal septicæmia. There were 17 deaths due to cancer, 3 to diabetes, and 4 to Bright's disease.

SOUTH SYDNEY HOSPITAL.

The annual meeting of subscribers to the South Sydney Hospital was held on January 29, 1917, when the annual report for the year 1916 was submitted.

The number of patients admitted during the year was 722. On January 1, 1916, there were 35 patients in the hospital, and on December 31, 1916, there were 34. Of the 723 patients in whom the treatment was completed, 46 died and 677 were discharged. A cure was said to have been effected in 600 patients. Death occurred within 24 hours of admission 11 times. The mortality is stated to be 6.07%, but the method of calculation is inadmissible, inasmuch as the total number of patients under treatment is used. The proper method of calculating mortality rates is to divide half the sum of the admission, discharges and deaths by the number of deaths multiplied by 100. For practical purposes it is usually sufficient to express the death-rate as a percentage of the cases in which the treatment was completed. At the South Sydney Hospital the mortality was 6.36%.

The average number of beds occupied was 37.08, and the average duration of residence was 18.37 days.

Of the 722 patients admitted, 400 were non-paying patients, and the remaining 322 contributed in the aggregate £505 towards their maintenance. On the assumption that the average length of residence of these 322 patients was the same as of the total number of patients, it appears that the average contribution of the paying patient is 1s. 8d. per day. The Committee plead for an immediate extension of the hospital to cover the needs of the district. It is suggested that 80 or 100 beds should be added. The sanction of the Government had been obtained for this extension,

but the work cannot be started until funds have been secured.

In the Out-patient Department no less than 3,973 patients received treatment. In addition, 1,844 patients were dealt with in the Casualty Department. The Committee call attention to the fact that there had been an increase in the number of casualties over that of the previous year representing 21.5%. Extension of accommodation in these Departments is also needed. Better equipment and more space in the Ophthalmic Department are said to be needed. During the year there were 422 patients attending this department. It is noted that the Committee, in their desire to emphasize the amount of work carried out, add the number of patients to the number of attendances, and cite a "grand total"!

The Committee call attention to a very serious defect in the institution. There is no pathological laboratory, and it is necessary for the members of the medical staff to send all material for examination to the Wandsworth Laboratory. They express the hope that the funds necessary for establishing a laboratory will be forthcoming in 1917. They also plead for funds to enable them to purchase an X-ray outfit. The doctors and patients are at a serious disadvantage in this regard. A small sum has already been secured as a nucleus for the fund.

The Committee place on record their appreciation of the valuable services given by Sir Herbert Maitland to the hospital. He is no longer able to perform active work on the staff, but holds the position of Honorary Consulting Surgeon. Dr. Langton resigned his position as Honorary Assistant Physician, and Dr. George Watt was appointed in his stead. Dr. Blue has carried out Dr. Froude Flashman's duties during the absence of the latter on active service. Dr. R. W. Young has been appointed Honorary Assistant Physician, to replace Dr. Blue. Dr. Stephen Lynch was appointed Honorary Anæsthetist in March, 1916. The Committee express their thanks to the retiring member of the honorary medical staff, and record their appreciation of the valuable services rendered by the members of the honorary medical staff.

During the year 1916 some difficulty was experienced on account of the resignation of various resident medical officers. At one time there was only one left.

The work of the Matron and her nursing staff has been of a high order, and calls forth praise from the Committee. Five new pupil nurses entered during the year, and two completed their four years' course of training.

The Committee have been handicapped by having to face financial difficulties. The increased cost of living and the high price of drugs have to a certain extent been met by an increase in the subscriptions, donations and patients' contributions. The income from all sources, however, has shown a distinct falling off, with the result that the Committee is saddled with debts amounting to over £2,000. The Government subsidy, which should have been reserved to pay for maintenance in 1917, was drawn upon. From the statements in the report it would appear that a considerable sum of money is urgently needed to place the hospital in a sound financial position, and to enable the Committee to make extensions so that the sick poor of the district may find the requisite accommodation. It is unlikely that the Government will be in a position, or would be willing if it were, to provide this money. The Committee is therefore forced to turn to the charitable public. The cause is so excellent an one that it should not require much pleading.

Obituary.

CHARLES FETHERSTONHAUGH.

Dr. Charles Fetherstonhaugh, who died at Williamstown, Victoria, very suddenly, on January 2, 1917, from pulmonary embolism, had been failing in health since April, 1916, when he had an attack of influenza, followed by cardiac irregularity. He felt it to be his duty to persevere with his work, and he saw his patients at his surgery a few hours before he passed away.

Charles Fetherstonhaugh was born in county Westmeath, Ireland, just 65 years ago. He studied medicines at the Dublin University and graduated in 1875. In the following year he obtained the degree of M.Ch., and also passed the necessary examinations for the licentiate of the Royal College of Surgeons of Ireland and for the licentiate in midwifery. After qualifying he served on Lord Blantyre's staff during the Russo-Turkish War, 1877-78, and in the Servo-Bulgarian War, 1885-86. He received medals, clasps and other distinctions during these campaigns. He came to Australia in 1887, and practised in different places in Victoria, including North Melbourne, in partnership with the late Dr. Burke, in Daylesford, Upper Murray, and in Glen Thompson.

Charles Fetherstonhaugh was the best type of an Irish gentleman, and had all the qualities which make for good citizenship. He was a sound and able practitioner, a good doctor in every sense of the word. He excelled as an anæsthetist, and in this capacity he was frequently in requisition, not only in Williamstown, but also in the city. He leaves a widow and one son, Lieutenant Cuthbert Fetherstonhaugh, now on active service in France, who, previous to enlisting, was a medical student at the Melbourne University.

Special Correspondence.

(By Our Special Correspondent.)

LONDON LETTER.

Juvenile Employment for Munition Work.

The Health of Munition Workers' Committee issued, early in October, 1916, a memorandum of considerable importance dealing with juvenile employment. With reference to the hours of labour, the memorandum contains the statement that "the Committee are strongly of opinion that every effort should be made to restrict the employment of all boys under sixteen within the limit of sixty hours, even at the cost of some inconvenience to male labour. They trust the time has now come when exceptions can be limited to cases where boys under sixteen are employed to assist men." The Committee are glad to learn that the Ministry and the Home Office are taking steps to bring the hours of work for women and girls in controlled establishments generally within the weekly limit of sixty hours allowed under the ordinary provisions of the Factory Act. While there can be no doubt that a daily period of twelve hours is longer than is desirable under ordinary circumstances, the Committee do not feel justified in recommending that no extension beyond this limit should be permitted. Such extension, if the weekly hours are limited as proposed above, must be met by a corresponding reduction in the hours of work on Saturdays or on other days of the week, and it provides an opportunity for exercise in the open air which might not otherwise be available. Some power of extension is of value to employers in enabling them to meet sudden emergencies, and the Committee consider that, unless the conditions of employment are specially favourable, daily employment for more than twelve hours a day may continue to be allowed under the present exceptional circumstances, provided that (*a*) the maximum weekly hours already recommended are not exceeded; (*b*) overtime employment concentrated on not more than three evenings in any week, and, as far as possible, not on consecutive evenings. If these conditions are satisfied, it is stated, the concession is not likely to do harm.

The Committee express the hope that all Sunday work will shortly be completely stopped, and they remain of the opinion that girls under eighteen and boys under sixteen should only be employed at night if other labour cannot be obtained. The week about night shift is condemned as being so short a period that a boy cannot get accustomed to sleep in the day-time. The Committee advocate short

breaks in the working hours for rest and recovery, and, in addition, strongly emphasize the importance of adequate canteen provision, whereby good food can be obtained and eaten under restful conditions.

Friendly Societies and the State.

The annual National Conference of Friendly Societies was held in Liverpool at the end of September, and was attended by many delegates. The chair was occupied by Mr. W. A. Platt, Past Chief Ruler of the Independent Order of Rechabites.

In his inaugural address, Mr. Platt dealt comprehensively with many of the problems which friendly societies had to deal with at the present time in connexion with the National Health Insurance Act; with the convalescent treatment of members suffering from phthisis; with the control of venereal diseases; with the effects of war wastage on their resources; and with their relationship to the State in regard to post-bellum finance.

He pointed out to the Conference that it was estimated that up to December last 615,027 members of friendly societies had joined his Majesty's forces, and this number had been almost duplicated since that date. Up to the end of the year they had to deplore the loss of 8,242 members, who had been killed on active service or had died as the result of injuries or from the hardships they had endured. The Committee had been concerned about the members engaged on active service or on garrison duty abroad, and the Conference would express its satisfaction that the Government had at last undertaken to make provision for them, so that the responsibility might not fall upon the friendly societies or public or private philanthropy. The after-care of consumptives was one of the most important questions now before the friendly societies, and the Conference would have seriously to consider whether after sanatorium treatment had restored a member's health so as to render him capable of light work he should be permitted to return to unhealthy surroundings. When men were discharged from sanatoria in an improved condition there should be after-care committees to take the oversight of them.

In the interest of a healthy membership, it was imperative that they should grapple with the national scourge at a very much earlier stage. Though such action be costly, it must in the long run prove to be an economy. The subject of medical referees had been a source of great trouble to all societies, and ought to be drastically dealt with. Personally he approved of State-appointed medical referees, and he trusted the conference would bring pressure upon the Government to make these appointments immediately after the war. Inquiries had been made in reference to the suggested systems for working a scheme of sickness visitation, and if areas could be set up, it would be in the interests of the societies concerned, and at a greatly reduced cost. The subject of venereal diseases called for the serious attention of all approved societies. Prompt medical benefit extended to these cases would prove a real economy to the funds, and a preventive to the disastrous penalties that arose in after-life. He was in favour of the postponement of valuations of voluntary funds until after the war. It would be a bad day for this country if responsible statesmen should attempt to make the State scheme financially sound at the friendly societies' expense. State insurance had come to stay, but the voluntary spirit would not be driven out of the societies.

The Harveian Oration.

The Harveian Oration was delivered on October 18, 1916, at the Royal College of Physicians by Sir Thomas Barlow. There was a good attendance of the Fellows, and among the guests was the Archbishop of Canterbury. The chair was occupied by the President, Dr. Frederick Taylor. Sir Thomas Barlow, whose lecture summarized the biography of Harvey, pointed out that he was carrying on a tradition that had arisen from the injunction of that great physician himself, who had been one of the principal benefactors of the College. William Harvey's discovery of the circulation of the blood was made during a period of great revival in learning, when the creation and dissemination of England's finest literature was in progress. Astrology, like astronomy, was a widely accepted science, but physics was not properly a science at the time, while chemistry was dominated by unreliable hypotheses. Harvey's *magnum opus* was, for a long period during his lifetime, linked in association with the College of Physicians. For twelve years he expounded his doctrine, and, during that time, found only one adverse critic among the Fellows. Harvey was not only a *Doctor Medici*, but a *Doctor Medicorum*, and in paying homage to him today the Fellows were but reviving the great respect and homage that had been paid to him by the College during his lifetime. Harvey, who had several times expressed his belief in God and the Christian faith, was imbued by a spirit of most generous appreciation of the work of his contemporaries, intense love for his family and his friends, and a willingness to take trouble on behalf of the young students of his day. It behoved the Fellows, for the honour of the profession, ever to seek out the secrets of Nature, as he had done, and to continue in the state of mutual love and admiration among themselves.

Correspondence.

THE MEDICAL PROFESSION AND FRIENDLY SOCIETIES.

Sir,—When one takes the trouble to go into the position created by the delay of action with regard to Friendly Societies one cannot fail to appreciate the action taken to defer the administration of justice to the profession by Friendly Societies until the Empire has emerged from its present critical position. If the profession were to take advantage of the present difficult position in which the Empire is placed, members would be doing exactly what members of Friendly Societies are doing every day, and practically always for higher wages, but it is not the intention of the profession to brand itself in this way; but by deferring action we show in a higher spirit our determination to do what is right and just to others as well as to ourselves by not forcing a position which in such circumstances would have to be accepted, however unreasonable our claims might be—that is what the Friendly Societies would do. Still, when the time comes we must act as wise men and not as fools. We must not take six months to map out what we want to do, and take six months more holding conferences, pricking and irritating societies until we have succeeded in rousing them to a state of frenzy, giving them ample time to build up their resources, whatever such might be, "to fight the doctors." Our action could be ready cut and dry. Action should not be confined to any one State at various times. It should be a Commonwealth and New Zealand combined action. Having had one or two conferences setting out the position in full, and then naming, at some near date to be fixed, that on which the combined profession would terminate their services except under the new specified conditions. There is absolutely no need to fight. The whole thing is a matter of business; but this is the crux, and where the profession practically always falls in. Couldn't we get the "Trades Hall" to tell us what to do?

Yours, etc.,

MEDICO.

Melbourne, Jan. 31, 1917.

SUPPLY OF DOCTORS FOR THE WAR.

Sir,—As the D.G.M.S., A.M.C., seems disinclined to employ any but the raw medical recruit, might I suggest that those of us who are willing to do war work should volunteer in a body to the R.A.M.C., either as hospital units or as individual workers. I think the former plan is preferable. It is no use volunteering to the A.A.M.C. You only get snubbed for your pains.

Yours, etc.,

W. KENT HUGHES.

22 Collins Street, Melbourne,
February 3, 1917.

The following have been nominated for election as members of the New South Wales Branch of the British Medical Association:—

Dr. Walter Perry, M.B., Ch.M. (Syd., 1916), Sydney Hospital.
Dr. Robert Sutherland Scott, M.B., Ch.M. (Syd., 1916), Sydney Hospital.
Dr. Geoffrey Mervyn Faithfull, M.B., Ch.M. (Syd., 1916), Sydney Hospital.
Dr. William Frederick Pattinson, M.B., Ch.M. (Syd., 1916), Sydney Hospital.
Dr. Frederick Charles Turnbull, L.R.C.P., Lond., M.R.C.S., Eng. (1913), c/o R. Barr Brown, Esq., 30-34 Elizabeth Street, Sydney.
Dr. Carl Oscar Hellstrom, M.B. (Syd., 1915), A.I.F.

It is announced in the *Commonwealth of Australia Gazette* of January 25, 1917, that the Keeley Cure for Opium Habit, Drunkenness, Neurasthenia, Tobacco Habit (The Leslie E. Kelley Co., Dwight, Illinois), the Woods' Treatment for Alcohol, Drug and Tobacco Habits (E. J. Woods, Ltd., London), the Drink Habit Cure (Neale Institute Co., Des Moines, Iowa), Dipsosave (Venn's Chemical Co., England), Dipsocure (The Carlton Chemical Co., England), Antidipso (Ward Chemical Co., England), and any preparation purporting to be a remedy for drunkenness, alcoholic habit, opium habit, tobacco habit, cocaine habit, or other drug habits are forbidden to be imported into the Commonwealth of Australia.

Medical Appointments.

Dr. A. Webster has been appointed Acting District Medical Officer and Public Vaccinator in Perth during the absence on leave of Dr. Blanchard.

Dr. S. J. Cantor has been appointed Medical Officer of Health to the Bayswater District Road Board, in succession to Dr. F. C. Thompson.

His Excellency the Governor of Tasmania in Council has appointed Dr. H. Haines, Dr. R. C. Irvine and Dr. J. A. Newall to be *ex officio* members of the Board of Management of the Launceston General Hospital.

Dr. L. S. Miller and Dr. R. C. Irvine have been appointed members of the Board of Optical Registration, Tasmania.

Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, locum tenentes sought, etc., see "Advertiser," page xxi.

Royal North Shore Hospital of Sydney, Honorary Assistant Surgeon to Ear, Nose and Throat Department.

Brisbane Hospital, Junior Resident Medical Officers.

Medical Appointments.

IMPORTANT NOTICE.

Medical practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, 429 Strand, London, W.C.

Branch.	APPOINTMENTS.
VICTORIA. (Hon. Sec., Medical Society Hall, East Melbourne.)	Brunswick Medical Institute. Bendigo Medical Institute. Prahran United F.S. Dispensary. Australian Prudential Association Proprietary, Limited. National Provident Association. Life Insurance Company of Australia, Limited. Mutual National Provident Club.
SOUTH AUSTRALIA. (Hon. Sec., 8 North Terrace, Adelaide.)	The F.S. Medical Assoc., Incorp., Adelaide.
QUEENSLAND. (Hon. Sec., B.M.A. Building, Adelaide Street, Brisbane.)	Brisbane United F.S. Institute.
WESTERN AUSTRALIA. (Hon. Sec., 230 St. George's Terrace, Perth.)	Swan District Medical Officer. All Contract Practice Appointments in Western Australia.
NEW SOUTH WALES. (Hon. Sec., 30-34 Elizabeth Street, Sydney.)	Department of Public Instruction—Appointments as Salaried Medical Officers, with duties which include the treatment of school children. Australian Natives' Association. Balmain United F.S. Dispensary. Canterbury United F.S. Dispensary. Leichhardt and Petersham Dispensary. M.U. Oddfellows' Med. Inst., Elizabeth Street, Sydney. Marrickville United F.S. Dispensary. N.S.W. Ambulance Association and Transport Brigade. North Sydney United F.S. People's Prudential Benefit Society. Phœnix Mutual Provident Society. F.S. Lodges at Casino. F.S. Lodges at Lithgow. F.S. Lodges at Orange. F.S. Lodges at Parramatta, Penrith, Auburn, and Lidcombe. Newcastle Collieries — Killingworth, Seaham Nos. 1 and 2, West Wallsend.
NEW ZEALAND: WELLINGTON DIVISION. (Hon. Sec., Wellington.)	F.S. Lodges, Wellington, N.Z.

Diary for the Month.

Feb. 13.—N.S.W. Branch, B.M.A., Ethics Committee.
Feb. 13.—Tas. Branch, B.M.A., Council.
Feb. 13.—Tas. Branch, B.M.A., Annual Meeting.
Feb. 15.—Vic. Branch, B.M.A., Council.
Feb. 20.—N.S.W. Branch, B.M.A., Executive and Finance Committee.
Feb. 22.—S. Aust. Branch, B.M.A., Branch.
Feb. 27.—N.S.W. Branch, B.M.A., Medical Politics Committee; Organization and Science Committee.
Feb. 28.—Vic. Branch, B.M.A., Council.
Mar. 7.—Vic. Branch, B.M.A., Branch.
Mar. 9.—S. Aust. Branch, B.M.A., Council.

EDITORIAL NOTICES.

Manuscripts forwarded to the office of this Journal cannot under any circumstances be returned.

Original articles forwarded for publication are understood to be offered to *The Medical Journal of Australia* alone, unless the contrary be stated.

All communications should be addressed to "The Editor," *The Medical Journal of Australia*, B.M.A. Building, 30-34 Elizabeth Street, Sydney, New South Wales.